
AIRLAB



User Manual

D&R
Mixing consoles
Version 2.03

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1	INTRODUCTION	3
2	PACKAGE CONTENTS	4
3	SYSTEM DESCRIPTION	5
4	TRIPLE LINE INPUT STEREO MODULE.....	8
4.1	SHORT OVERVIEW OF TRIPLE LINE MODULE FUNCTIONS.....	10
5	TRIPLE DIG INPUT MODULE	16
5.1	SHORT OVERVIEW OF TRIPLE DIG INPUT FUNCTIONS.....	18
6	TELCO MODULE.....	24
6.1	COMMUNICATION WITH TELCO MODULE	27
7	MODULE CONNECTORS.....	28
8	MASTER SECTION.....	29
9	TIMER AND SYSTEM-SETUP.....	32
9.1	CUE RESET	32
9.2	AIRLAB METERING	33
10	BACK PANEL CONNECTORS.....	34
11	AIRLAB MASTER BACK PANEL WIRING	37
12	AIRLAB JUMPER SETTINGS	39
12.1	TRIPLE INPUT MODULE.....	39
12.2	TRIPLE DIG INPUT MODULE.....	41
12.3	TELCO MODULE.....	43
13	INSTALLING/SERVICING THE AIRLAB.....	44
14	HOW TO PROGRAM THE AIRLAB.....	48
14.1	MODULE SETTINGS.....	48
14.2	MASTER SETTINGS	59
14.3	SYSTEM SETUP	60
14.4	TIMER.....	62
14.5	MENU DIAGRAM.....	63
15	WINDOWS SOFTWARE	64
15.1	INSTALLATION	64
15.2	GETTING STARTED	64
16	SPECIFICATIONS.....	67
17	SICO REMOTE UNIT	68
18	DIRECTOR UNIT (DISCONTINUED).....	69
19	LIST OF FIGURES	70
20	LIST OF TABLES.....	71
21	AIRLAB USER QUESTIONNAIRE.....	72
22	PRODUCT SAFETY.....	73
23	DECLARATION OF CONFORMITY.....	75
24	DISCLAIMER	76

1 INTRODUCTION

Dear client,

Thank you for choosing the Airlab console.

The Airlab is designed by specialists in the field of radio broadcast and is intended to be used as a 24 hour "On-Air" console as well as a production console.

We are confident that you will be using the Airlab for many years to come, and wish you much success.

We always value suggestions from our clients, and we would therefore be grateful if you could complete and return the questionnaire included at the back of this manual, once you have become familiar with your Airlab. We will certainly learn from your comments, and very much appreciate your time doing this.

With kind regards,

Duco de Rijk
PRESIDENT

2 PACKAGE CONTENTS

The Airlab package comes with the following parts inside.

- 1x Airlab
- 1x This manual
- 1x Airlab Control Center supporting Win98SE/Win2000/WinXP/WinNT4.0
- 1x Chip card
- 1x Power cable

3 SYSTEM DESCRIPTION

D&R Quality

D&R has been the largest manufacturer of mixing consoles and signal processors in the Netherlands for 26 years. More than 90% of the total production is exported worldwide. This market demands excellent pricing and quality standards.

D&R products are used in studios and live performances, both of which require 100% reliability, which is the result of 26 years of research, design and manufacturing.

These high standards of reliability are also to be found imbedded in the new line of broadcast mixers, which is particularly important for this type of product, required to work around the clock.

Airlab Quality

The high standard of quality of the Airlab is demonstrated by the welded steel RF screening and sturdy housing, the heavy duty power supply, its modular approach and locking IDC connectors mounted on high quality double sided, plated through, glass epoxy printed circuit boards.

The signal paths are electronically switched using CMOS logic and 'FET' components, ensuring reliable and smooth switching.

High quality 100mm faders control the new redesigned "THAT" VCA's. Switching is performed by isolated encapsulated reed relays guaranteeing many years of trouble free smooth switching.

Airlab flexibility

The Airlab is a specially designed production/ On-Air broadcast console. Although the design has been carefully budgeted, no compromises have been made in either quality or features, particularly in the areas of VCA control, switching, signaling, fader start/stop and communication.

The Airlab is fully modular, which means flexibility in the configuration. The Triple input modules as well as the Telco input modules can be placed anywhere in the chassis. A partially loaded Airlab can be completed using low cost 'blind modules'.

Digital programmable

Most of the important module functions such as module set-up as well as overall master settings are programmable and can be saved on a personal memory card or in the internal memory of the Airlab. The LCD in the master section helps you with the programming. There is also a possibility to do this on your PC by way of RS232 communication.

System Description

The Airlab is a complete and self-contained piece of hardware, requiring no additional items in order to be operated. All relevant functions are built-in, such as fader start/stop (pulse or continuously selectable). There is also no need for complex mic-on/cough switching to the announcer booth. A stereo jack, a LED and a simple push-button switch complete this task.

The optional SiCo unit is a nice looking alternative with many extras for Cough switching and monitoring.

Built-in stereo headphone amp

The Airlab contains built-in headphone amps for the Announcer and Guests. No additional amps are needed. The Studio output needs to be hooked up to a power amp that can handle +6 dBu as nominal level for full power.

Clear layout

To create a clear layout most of the switches have LED indicators, large CUE/SELECT and ON switches and the front panels are angled for visibility.

All similar functions in the triple input channels are color-coded with additional fader knobs available for personalized channel color-coding.

Example:

Microphone channels:	red fader knobs
Telephone channels:	gray fader knobs
Stereo channels:	black fader knobs

Radio communication

On the basis that there's no radio without communication, the Airlab has extensive possibilities for signaling and communications. Every microphone channel has its own signaling and talk back circuitry and all outputs can also be connected to the talk back circuitry.

The announcer/technician/producer/director can communicate with the announcer booth, guests, monitoring system, all connected Telco modules and auxiliaries, either individually or in any combination. A very intelligent CUE system connects every activated CUE switch with each other to create a transparent and intuitive communication system. It will be explained in detail further in this manual.

Signaling

It is extremely important in broadcast to know whether a microphone channel is active.

Every channel has a red light signaling available on the remote connector.

The Airlab has two external connectors for ON-AIR (mic-on) signaling to control external relays activating high voltage ON-AIR lamps.

NEVER CONNECT 115-230 VOLT LAMPS DIRECTLY TO THE ON-AIR SIGNALING OUTPUTS IN THE MASTER SECTION!!

Broadcasting Options

In designing the Airlab, D&R decided to make the system as flexible for the operator as possible. Therefore the Airlab can be used in many ways.

There's a minimum of jumper settings, which can be set to suit your own needs. Most of the settings are under software control in the master section and can be stored to a chip card.

The Airlab can be used in a traditional manner with separate control and announcer rooms, or in a more open way, whereby announcing and engineering control are carried out in one room. A self-op setup or a combination of several setups is possible.

More than one Broadcast Studio

There are numerous monitor facilities in the Airlab for external sources as well as internal sources. The control monitors (and meters) can be switched to follow the control room for separate (stereo) sources. These features mean that the Airlab is specially suited to work in a studio-complex environment, where there is more than one studio/control room being used for broadcast.

In this situation, the Airlab is capable of being the main On-Air console due to the two main outputs it contains. These main outputs can be fully transformer balanced as an option.

Special Recording Outputs

The Airlab has a special Tape/Recording output on a 0dBu output level.

Double Stereo VU/Peak Metering

In order to achieve a good balance between spoken words and music, it's important to be able to read the recording level accurately. The Airlab has a standard 4 VU meters reading per pair the main output and the CUE output. A PPM version of the VU meter is available as an option.

SUMMARY

Whilst using the Airlab, you'll discover its many hidden features, and will continue to appreciate its extensive capabilities.

4 TRIPLE LINE INPUT STEREO MODULE



MONO

Every channel has a mono switch with LED to send a mono input signal to both outputs of the module.

(PHANTOM POWER, not on front panel.

48 volt switchable by a jumper setting (see also chapter 12))

MIC-TRIM

The trim control adds an extra 13dB of mic gain to the mic pre-amp. An optimal gain range can be accomplished in this way.

GAIN

The gain control adjusts the incoming signal level on the MIC and LINE input.

LINE A

The triple module default is in 'LINE A' mode. Operating the 'LINE B' switch or the MIC switch changes the mode.

LINE B

When line B is selected (with optional RIAA correction amp), the green LED is illuminated.

MIC

MIC input selector switch between MIC-input or Line-A/B input. When the LED is illuminated the MIC-input is activated.

HIGH

Adjusts high frequencies with +/- 12 dB at 10 kHz shelf.

MID

Adjusts mid frequencies with +/- 12 dB at 1 kHz bell.

LOW

Adjusts the low frequencies with +/- 12 dB at 60 Hz bell.

SUB

The sub switch assigns the signal in stereo to the sub output.

PROG(RAM)

The program switch assigns the signal in stereo to the program output.

STEREO AUX

Transmits a stereo signal to the AUX master post fader. A jumper on the board determines whether this is pre or post VCA.

The channel 'ON' switch also affects the aux send (only when set to post fader).



PAN

Allows adjustment between the left and right channel outputs.

CUE/SELECT

Stereo pre-fade listening; allows pre-fade listening of the channel with the fader closed. The CUE function will be automatically TURNED OFF when the channel becomes active. The CUE switch also generates a start/stop pulse in the line-mode. The CUE switch also acts as a SELECT switch for the programming of the modules functions.

ON

Channel on/off switch. The Airlab is capable of sending out a pulse by ON switch as well as by fader. This is software programmable. In any case the adjacent LED will lit when the ON switch is activated.

FADER

The linear fader controls a VCA that controls the module's overall level. Electronics sense when the fader is opened and generates (when programmed) the start for remotely connected devices.

4.1 SHORT OVERVIEW OF TRIPLE LINE MODULE FUNCTIONS

Microphone input:	Electronically balanced
Impedance:	2 kOhm
Level:	From -70 dBu microphone input to 0 dBu
Connectors:	XLR female, Pin 1 = ground. Pin 2 = in phase. Pin 3 = out of phase
48 Volt phantom:	Jumper enabled/disabled, (see chapter 12)
Mic High pass filter:	At 80 Hz internally set by a jumper, (see chapter 12)
REMOTE:	(Only when programmed) Remote control of the channels CUE and/or Cough/Communication 'Channel-on' light signaling. Connection by way of a stereo jack
Tip =	Positive supply voltage, current limited at 6 mA when the channel is 'active' (fader up). A direct connection to a LED is possible between tip and sleeve.
Ring =	When momentarily connected to ground, the channel will be muted and CUE is activated creating a Cough/Communication function when the channel is in the Mic mode. CUE can be normally activated when in LINE mode.
Sleeve =	ground.
A-Input and B-Input:	The input impedance for both 'A' and 'B' are >10 kOhm, and the maximum sensitivity ranges from -20 dBu to +20 dBu. The signal to noise ratio is -90 dBr (R.I.A.A. = -70 dBr). Nominal level of the A input is +4dBu and for the B input 0dBu.
Connector is Jack:	LINE A = balanced wired to a female XLR connector Pin 2 is in phase, Pin3 is out of phase and pin1 is ground LINE B = unbalanced on Cinch connectors.
START:	Stereo jack plug Tip = Center contact Ring = Normally open Sleeve = Normally close Maximum voltage/current that can be handled=24 volt at 50mA

NOTE: Polarity is not important with reed relays!

DO NOT CONNECT 115/230VOLT AC TO THIS CONNECTOR!!!

Pulse or Continuous Signal: Software programmable between active or not and between pulse or continue

Mono Microphone input

The front end of this module is designed to amplify balanced microphone signals. A +48 Volt phantom power supply is available for condenser microphones. The Airlab has the ultimate in mic amplification with a wide dynamic range and extremely low noise.

The microphone input is electronically balanced and protected against R.F. interference.

Input impedance is 2 kOhm. This is high enough to accept all modern microphones.

The Gain control can vary the input levels with a range of 40dB in one turn.

The signal to noise ratio is -127.0 dBr and is therefore well suited to low noise applications.

Phantom Powering

This +48 Volt power is required for condenser microphones and can be applied to the microphone inputs via a jumper setting on the PCB. (See also chapter 12)

When the phantom power is applied and the channel is active, a 'click' can be heard when a microphone is plugged in. This is due to a D.C. component on the input, which is suddenly interrupted and amplified by +/- 70 dB. It's therefore important **NOT** to do this with channel faders up and channel ON. It's even better to switch off the console entirely before connecting or disconnecting any kind of equipment.

DO NOT use unbalanced or electret microphones when the phantom power is applied as it could damage the microphones.

High-Pass Filter on MIC

The high-pass filter attenuates the low frequencies below 80 Hz and can be switched on or off by jumper settings (see also chapter 12). It is only active on MIC inputs.

NOTE: Some microphones have built in high-pass filters and therefore do not require use of the Airlab high-pass filter.

Microphones used for speech are usually set for high-pass filtering in order to avoid 'popping' and other unwanted low frequency rumble and therefore improve the quality and intelligibility of the spoken word.

A. COUGH / REMOTE / SIGNALING IN MIC MODE

This useful feature has two important functions:

1. Cough/Communication,
2. 'MIC-on' (CUE on)

Both functions are software programmable.

1. Cough/Communication

(A push-button needs to be connected to the ring and sleeve of the remote jack plug.)

Using the push-button during broadcast, the announcer can temporarily mute the microphone in order to cough (where the name comes from). At the same time his microphone will be routed to the CUE system, in order to give him the opportunity to communicate with the engineer/producer. Cough works on every programmed mic input.

2. 'MIC-on'

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.

In addition to the localized 'mic-on' signaling, there's also a master signal in the master section. The ON-AIR signaling outputs 1 and 2 offer the option of driving external red light indicators in the studio by way of external high voltage relays.

B. REMOTE/SIGNALLING IN LINE MODE

In this mode CUE can be switched on/off via a remote external push-button.

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.

Alignment of the MIC input

With the fader in the 'down' position, and the CUE activated, the input signal is adjusted with the gain control until the 0 dB position in the master VU meter is reached. When the fader is in its 0 dB position, the signal has a nominal level in the Airlab. This way of alignment will give enough headroom to compensate for signal losses of up to 10 dB, whilst the noise floor remains well below the nominal level.

Airlab Line input module

This part of the triple input module is specially designed to accept balanced and unbalanced stereo input signals. There are two stereo inputs; line A and line B. Both inputs can have fader start functions. By changing software settings this can be accomplished.

R.I.A.A.

As an option, a stereo phono pre-amp with R.I.A.A. filter curves can be plugged onto the motherboard, in order to accept Magnetic Dynamic Phono cartridges. The Line B input will be converted.

START/STOP FUNCTIONS CONFIGURED

The 'Start' is only active when this is activated in the software.

These remote connectors are activated by the fader and/or 'ON' switch in the channel module. The start jack connectors are electronically separated by use of encapsulated reed relays.

Reed relays are ideal devices for eliminating ground loops and limited life span effects of other switches and can easily be interfaced with all modern equipment.

The start connectors are connected to separate reed relays.

The maximum VOLTAGE/CURRENT is 24v/50mA. (Polarity is not important with reed relays!)

- NOTE 1:** *Nearly all of the modern devices require pulse information. Continuous signals however, can have the advantage that during broadcast a CD player cannot be accidentally stopped. One disadvantage however is that some CD players are blocked from other functions when started with a continuous pulse.*
- NOTE 2:** *It is advisable to only use the pulse start mode with jingle machines. The cart has to finish its tape to the end and then automatically rewinds.*
- NOTE 3:** *Some of the older products such as the A-77, require additional relays or switching transistors to operate satisfactorily, contact your dealer for more information.*

MIC/LINE GAIN

The Gain control (only active when the line input is selected) adjusts the gain of the stereo channel pre-amps, within a range of -20 dB to +20 dB for the line level and +/-40 dB for the Mic level. The range of the fader (VCA) gives an additional 10 dB of gain when needed.

Alignment of the LINE input of a channel

To align the line input of a channel close the fader and activate the cue switch. The gain control is used to adjust the level of the incoming signal until a 0 dB reading is achieved. If the 'ON' switch is now activated, the signal level will be nominal. When the fader is opened, the CUE signal will be automatically reset, and its associated LED will switch off.

Equalizer

The equalizer is optimized for broadcast. Center detents on all equalizer controls indicate their flat position.
(On special demand we could manufacture modules without an EQ section)

The maximum lift and cut is 12 dB at the following frequencies:

10 kHz:	Shelving
1 kHz:	Bell
60 Hz:	Bell

SUB

The Sub switch switches the stereo modules output to a separate SUB mix amp located in the master section of the console.

This setup makes production work possible during ON-AIR broadcast due to extremely good cross talk figures achieved in the Airlab console by careful usage of high-end CAD design systems in the initial design stage of the console.

PROGRAM

The Program switch switches the stereo modules output to the main mix amps located in the master section of the console.

Auxiliary

The stereo auxiliary send is post fader, bringing the signal to the master stereo auxiliary send. When the input module is used for microphone signals only both left and right signal paths are fed by the same mono mic input signal. The channels 'ON' switch will also switch the Auxiliary send on or off when its jumper is set to post fader.

PAN

The PAN enables adjustment between the left and right signals. The range is not restricted in order to enable to position any incoming signal anywhere in the stereo image.

CUE

This is an automatic pre-fade-listen system, which enables you to listen to a channel without actually opening that channel. When the CUE button is activated, the channel signal will be connected to the cue output and meter circuitry; the red cue LED indicator will illuminate.

When the channel is active, the CUE system will be reset, including its associated LED, however it's possible to re-activate the CUE switch.

Channel Cueing on DJ channels will only be heard in the headphone outputs. The CRM output will be muted.

The CUE switch can also generate a start pulse for remotely connected machines by software programming.

The CUE signal can be heard in two ways:

1. Through the stereo Control Room Monitors by activating the "CUE to CRM" function switch in the master section. If the cue is activated in one of the channels, the CRM and meters will be activated without interruption of the main output.
2. By way of an externally connected cue amplifier with loudspeaker.

ON

The channel on/off switch operates in tandem with the fader.

There are two methods of activating the channel:

- A. Press the 'ON' switch (Green LED is on). Then by moving up the fader, the signal is sent to the master and at the same time a mic-on/channel on indication is sent to the remote connector.
- B. When the 'ON' switch is 'OFF', no LED is illuminated. As the fader is moved upwards, the channel is put into 'stand-by'. At this point there is no "mic-on/channel on" signaling or audio to the master. Pressing the 'ON' switch activates the channel and the green LED is on.

In order to switch the channel and mic-on signaling off, the 'ON' switch should be deactivated, or the fader closed.

Fader

The fader is an ultra smooth 100mm model controlling the internal high quality VCA's and sending on/off information to the logic circuitry. There is no audio going through the faders, which guarantees noise free fading forever! When the fader is closed, the signal is automatically muted, providing a cut-off in excess of 100 dB. This high dB cut-off value ensures that the main output is protected from cross talk from announcers.

5 TRIPLE DIG INPUT MODULE



MONO

Every channel has a mono switch with LED to send a mono input signal to both outputs of the module.

(PHANTOM POWER, not on the front panel. But 48 volt switch able by a jumper setting (see also chapter 12))

MIC-TRIM

The trim control adds an extra 13dB of mic gain to the mic pre-amp. An optimum gain range can be accomplished in this way.

GAIN

The gain control adjusts the incoming signal level on the MIC and DIG-LINE inputs.

LINE A

The triple-dig module default is in 'LINE A' mode (AES3). If no AES3 signal is connected or the AES3 signal can't be read, the LED will be red-flashing. Operating the 'DIG-LINE B' switch or the MIC switch changes its mode.

LINE B

When 'LINE B' is selected (S/P-dif) the green LED is illuminated. If no S/P-dif signal is connected or the S/P-dif signal can't be read, the LED will be red-flashing.

MIC

MIC input selector switch between MIC-input or Line-A/B input. When the LED is illuminated the MIC-input is activated.

HIGH

Adjusts high frequencies with +/- 12 dB at 10 kHz shelfe.

MID

Adjusts mid frequencies with +/- 12 dB at 1 kHz bell.

LOW

Adjusts the low frequencies with +/- 12 dB at 60 Hz bell.

SUB

The sub switch assigns the signal in stereo to the sub output.

PROG(RAM)

The program switch assigns the signal in stereo to the program output.

STEREO AUX

Transmits a stereo signal to the AUX master post fader. A jumper on the board determines whether this is pre or post VCA.

The channel 'ON' switch also affects the aux send (only when set to post fader).



PAN

Allows adjustment between the left and right channel outputs.

CUE/SELECT

Stereo pre-fade listening; allows pre-fade listening of the channel with the fader closed. The CUE function will be automatically TURNED OFF when the channel becomes active. The CUE switch also generates a start/stop pulse in the line-mode. The CUE switch also acts as a SELECT switch for the programming of the modules functions.

ON

Channel on/off switch. The Airlab is capable of sending out a pulse by ON switch as well as by fader. This is software programmable. In any case the adjacent LED will lit when the ON switch is activated.

FADER

The linear fader controls a VCA that controls the module's overall level. Electronics sense when the fader is opened and generates (when programmed) the start for remotely connected devices.

Digital Output

The Digital output is the PROG-bus or the SUB-bus by Jumper selectable. The output level (digital headroom) can be trimmed by the internal level trimmers (see also chapter 12).

The audio signal on the AES3-out and S/Pdif-out are the same.

5.1 SHORT OVERVIEW OF TRIPLE DIG INPUT FUNCTIONS

Microphone input:	Electronically balanced
Impedance:	2 kOhm
Level:	From -70 dBu microphone input to 0 dBu
Connectors:	XLR female, Pin 1 = ground. Pin 2 = in phase. Pin 3 = out of phase
48 Volt phantom:	Jumper enabled/disabled, (see chapter 12)
Mic High pass filter:	At 80 Hz internally set by a jumper, (see chapter 12)
REMOTE:	(Only when programmed) Remote control of the channels CUE and/or Cough/Communication 'Channel-on' light signaling. Connection by way of a stereo jack
Tip =	Positive supply voltage, current limited at 6 mA when the channel is 'active' (fader up). A direct connection to a LED is possible between tip and sleeve.
Ring =	When momentarily connected to ground, the channel will be muted and CUE is activated creating a Cough/Communication function when the channel is in the Mic mode. CUE can be normally activated when in LINE mode.
Sleeve =	ground.
Dig. A-Input:	transformer balanced 110ohm AES3 input on XLR Data: 24bit, 32..96kHz. Dynamic Range, S/N: 100dB Input level: -9dBFS = 0dBu preGain (gain +/-20dB)
Dig. B-Input:	unbalanced 75ohm S/P-dif input on Cinch (black). Data: 24bit, 32..96kHz. Dynamic Range, S/N: 100dB Input level: -9dBFS = 0dBu preGain (gain +/-20dB)
Digital output:	AES3: transformer balanced 110ohm on XLR S/P-dif: 75ohm, unbalanced on Cinch (red). Data: 24bit, 32..96kHz. Dynamic Range, S/N: 100dB The digital output frame clock (sample rate) can be setup in two different ways by internal jumper setting (see also chapter 12). 1. Fixed. Output Frame Clock (sample rate) is always 44.1kHz 2. PLL. Output Frame Clock (sample rate) is identical to the clock signal of the digital input. Jumper selectable SUB or PROG output. Output level: adjustable (normal 0dBu = -9dBFS)
Connector is Jack:	LINE A = AES3 balanced wired to a female XLR connector Pin 2 is in phase, Pin3 is out of phase and pin1 is ground LINE B = S/P-dif unbalanced on Cinch connectors.
START:	Stereo jack plug Tip = Center contact Ring = Normally open Sleeve = Normally close Maximum voltage/current that can be handled=24 volt at 50mA

NOTE: Polarity is not important with reed relays!

DO NOT CONNECT 115/230VOLT AC TO THIS CONNECTOR!!!

Pulse or Continuous Signal: Software programmable between active or not and between pulse or continue

Mono Microphone input

The front end of this module is designed to amplify balanced microphone signals. A +48 Volt phantom power supply is available for condenser microphones. The Airlab has the ultimate in mic amplification with a wide dynamic range and extremely low noise.

The microphone input is electronically balanced and protected against R.F. interference.

Input impedance is 2 kOhm. This is high enough to accept all modern microphones.

The Gain control can vary the input levels with a range of 40dB in one turn.

The signal to noise ratio is -127.0 dBr and is therefore well suited to low noise applications.

Phantom Powering

This +48 Volt power is required for condenser microphones and can be applied to the microphone inputs via a jumper setting on the PCB. (See also chapter 12)

When the phantom power is applied and the channel is active, a 'click' can be heard when a microphone is plugged in. This is due to a D.C. component on the input, which is suddenly interrupted and amplified by +/- 70 dB. It's therefore important **NOT** to do this with channel faders up and channel ON. It's even better to switch off the console entirely before connecting or disconnecting any kind of equipment.

DO NOT use unbalanced or electret microphones when the phantom power is applied as it could damage the microphones.

High-Pass Filter on MIC

The high-pass filter attenuates the low frequencies below 80 Hz and can be switched on or off by jumper settings (see also chapter 12). It is only active on MIC inputs.

NOTE: Some microphones have built in high-pass filters and therefore do not require use of the Airlab high-pass filter.

Microphones used for speech are usually set for high-pass filtering in order to avoid 'popping' and other unwanted low frequency rumble and therefore improve the quality and intelligibility of the spoken word.

A. COUGH / REMOTE / SIGNALING IN MIC MODE

This useful feature has two important functions:

1. Cough/Communication,
2. 'MIC-on' (CUE on)

Both functions are software programmable.

1. Cough/Communication

(A push-button needs to be connected to the ring and sleeve of the remote jack plug.)

Using the push-button during broadcast, the announcer can temporarily mute the microphone in order to cough (where the name comes from). At the same time his microphone will be routed to the CUE system, in order to give him the opportunity to communicate with the engineer/producer. Cough works on every programmed mic input.

2. 'MIC-on'

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.

In addition to the localized 'mic-on' signaling, there's also a master signal in the master section. The ON-AIR signaling outputs 1 and 2 offer the option of driving external red light indicators in the studio by way of external high voltage relays.

B. REMOTE/SIGNALLING IN LINE MODE

In this mode CUE can be switched on/off via a remote external push-button.

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) or an opto-coupler.

Alignment of the MIC input

With the fader in the 'down' position, and the CUE activated, the input signal is adjusted with the gain control until the 0 dB position in the master VU meter is reached. When the fader is in its 0 dB position, the signal has a nominal level in the Airlab. This way of alignment will give enough headroom to compensate for signal losses of up to 10 dB, whilst the noise floor remains well below the nominal level.

Airlab Dig Line input module

This part of the triple input module is specially designed to accept balanced (AES3) and unbalanced (S/P-dif) digital input signals. There are two digital inputs; line A (AES3) and line B (S/P-dif). Both inputs can have fader start functions. By changing software settings this can be accomplished.

START/STOP FUNCTIONS CONFIGURED

The 'Start' is only active when this is activated in the software.

These remote connectors are activated by the fader and/or 'ON' switch in the channel module. The start jack connectors are electronically separated by use of encapsulated reed relays.

Reed relays are ideal devices for eliminating ground loops and limited life span effects of other switches and can easily be interfaced with all modern equipment.

The start connectors are connected to separate reed relays.

The maximum VOLTAGE/CURRENT is 24v/50mA. (Polarity is not important with reed relays!)

- NOTE 1:** *Nearly all of the modern devices require pulse information. Continuous signals however, can have the advantage that during broadcast a CD player cannot be accidentally stopped. One disadvantage however is that some CD players are blocked from other functions when started with a continuous pulse.*
- NOTE 2:** *It is advisable to only use the pulse start mode with jingle machines. The cart has to finish its tape to the end and then automatically rewinds.*
- NOTE 3:** *Some of the older products such as the A-77, require additional relays or switching transistors to operate satisfactorily, contact your dealer for more information.*

MIC/LINE GAIN

The Gain control (only active when the line input is selected) adjusts the gain of the stereo channel pre-amps, within a range of -20 dB to +20 dB for the line level and +/-40 dB for the Mic level. The range of the fader (VCA) gives an additional 10 dB of gain when needed.

Alignment of the LINE input of a channel

To align the digital-line input of a channel close the fader and activate the cue switch. The gain control is used to adjust the level of the incoming signal until a 0 dB reading is achieved. If the 'ON' switch is now activated, the signal level will be nominal. When the fader is opened, the CUE signal will be automatically reset, and its associated LED will switch off.

Equalizer

The equalizer is optimized for broadcast. Center detents on all equalizer controls indicate their flat position.
(On special demand we could manufacture modules without an EQ section)

The maximum lift and cut is 12 dB at the following frequencies:

10 kHz:	Shelving
1 kHz:	Bell
60 Hz:	Bell

SUB

The Sub switch switches the stereo modules output to a separate SUB mix amp located in the master section of the console.

This setup makes production work possible during ON-AIR broadcast due to extremely good cross talk figures achieved in the Airlab console by careful usage of high-end CAD design systems in the initial design stage of the console.

PROGRAM

The Program switch switches the stereo modules output to the main mix amps located in the master section of the console.

Auxiliary

The stereo auxiliary send is post fader, bringing the signal to the master stereo auxiliary send. When the input module is used for microphone signals only both left and right signal paths are fed by the same mono mic input signal. The channels 'ON' switch will also switch the Auxiliary send on or off when its jumper is set to post fader.

PAN

The PAN enables adjustment between the left and right signals. The range is not restricted in order to enable to position any incoming signal anywhere in the stereo image.

CUE

This is an automatic pre-fade-listen system, which enables you to listen to a channel without actually opening that channel. When the CUE button is activated, the channel signal will be connected to the cue output and meter circuitry; the red cue LED indicator will illuminate.

When the channel is active, the CUE system will be reset, including its associated LED, however it's possible to re-activate the CUE switch.

Channel Cueing on DJ channels will only be heard in the headphone outputs. The CRM output will be muted.

The CUE switch can also generate a start pulse for remotely connected machines by software programming.

The CUE signal can be heard in two ways:

1. Through the stereo Control Room Monitors by activating the "CUE to CRM" function switch in the master section. If the cue is activated in one of the channels, the CRM and meters will be activated without interruption of the main output.
2. By way of an externally connected cue amplifier with loudspeaker.

ON

The channel on/off switch operates in tandem with the fader.

There are two methods of activating the channel:

- A. Press the 'ON' switch (Green LED is on). Then by moving up the fader, the signal is sent to the master and at the same time a mic-on/channel on indication is sent to the remote connector.
- B. When the 'ON' switch is 'OFF', no LED is illuminated. As the fader is moved upwards, the channel is put into 'stand-by'. At this point there is no "mic-on/channel on" signaling or audio to the master. Pressing the 'ON' switch activates the channel and the green LED is on.

In order to switch the channel and mic-on signaling off, the 'ON' switch should be deactivated, or the fader closed.

Fader

The fader is an ultra smooth 100mm model controlling the internal high quality VCA's and sending on/off information to the logic circuitry. There is no audio going through the faders, which guarantees noise free fading forever! When the fader is closed, the signal is automatically muted, providing a cut-off in excess of 100 dB. This high dB cut-off value ensures that the main output is protected from cross talk from announcers.

Digital Output:

The Airlab Triple digital input has 2 digital outputs. AES3 on the XLR and S/P-dif on de black cinch. Dependent on the jumper setting the output is giving the stereo PROG signal or the stereo SUB-signal. Normal the output level is -9dBFS but the level (headroom) can be adjusted (see also chapter 12). The digital output frame clock (sample rate) can be setup in two different ways by internal jumper setting.

- 1: PLL. Output Frame Clock (sample rate) is identical to the clock signal of the digital input (Select by the 'Line B' switch, 32..96 kHz). If the digital-input is not in lock (no input signal or a wrong signal) the Output Frame Clock will jump back to 44.1kHz.
- 2: Fixed. Output Frame Clock (sample rate) is always 44.1kHz

Be wary: In the 'PLL' mode the digital output signal will shortly be muted if you change the digital input selection ('Line B' switch) or if the digital input lose lock.

So for a Digital Main output the 'Fixed' setting is recommended. At connecting for instance a DAT or MD player/recorder, the 'PLL' setting can be used.

In PLL mode:

In the 'PLL' mode the digital output sample-rate is in sync with the digital input.
If no digital input signal is connected or selected (Line-B LED will be RED-flashing) the output frame clock will be 44.1kHz.
If a digital input signal is connected and selected the Line-B LED well be GREEN (Line B select) or off (Line A select). The output frame clock well be equal to the digital input frame clock.

In Fixed mode:

The digital output frame clock will be fixed at 44.1kHz.

6 TELCO MODULE



TRIM

The trim control adjusts the optimum side-tone suppression (R-balance). The trim needs to be re-adjusted with every new installation.

TELCO SEND

This gain control adjusts outgoing levels coming from the main output or the SUB output.

LINE

The Line input switches the modules input from the internal hybrid to a female XLR on the connector panel to eventually accept an external (digital) hybrid.

GAIN

This control adjusts incoming call levels.

LC/HC

Fixed low and high frequency roll off.

CONNECT

Indicates that the internal hybrid is active.

SUB

Assigns input signal to separate SUB master.

PROG(RAM)

Assigns input signal to main master busses.

ST(ereo) AUX

Transmit a signal to the aux. master pre or post fader. The channel ON switch also affects the aux send.

PAN

Allows adjustment between the left and right channel outputs.

CUE

Pre-fade listening. Allows pre-fade listening of the input signal and allows communication such as taking an incoming call with the fader closed. The CUE LED is also a ring indicator for incoming calls. When this LED flashes the "call" can be taken by pushing the CUE switch.

ON

Channel on/off switch. While in closed fader stand-by mode, i.e. when green LED is off incoming calls can be connected by pressing the "ON" switch.

FADER

Channel VCA volume-control adjusts overall channel level.



Airlab TELCO input module

This input module is specially designed to accept a telephone line. An internal telephone hybrid circuit simplifies connection of telephone lines and phone appliances. There is a LINE input to accept external hybrids, a WALL connector for connecting to the telephone line and a "TO PHONE" output that connects to the phone device.

Jumpers

Aux send pre/post and C balance are jumper enabled/disabled. All other functions are software programmable.

TELCO SEND

The Telco send controls the outgoing signal to the caller. This can be either the MIX and/or Sub output dependent upon the SUB/PROG switch settings in the Telco module. This switch not only controls the assignment of the incoming signal to the masters but also which signal is sent to the caller.

GAIN

The Gain control adjusts the gain of the incoming phone call within a range of -20 dBu to +20 dBu. The range of the fader (VCA) gives an additional 10 dB of gain when needed.

LC (Low Cut)

The high pass filter smoothly filters out all frequencies below the pass band of the telephone line.

HC (High Cut)

The low pass filter effectively filters out all above telephone line frequencies.

CONNECT

This LED indicates the internal Hybrid being active.

SUB

The SUB switch switches the Telco modules output to the SUB mix amps located in the master section of the console.

PROGRAM

The PROGRAM switch switches the stereo modules output to the main mix amps located in the master section of the console.

Auxiliary

The stereo auxiliary sends a post fader signal, dependent upon the 'ON' switch of the input channel, to the master auxiliary busses. The PAN control creates a stereo image in the Aux masters. This setup makes production work possible during ON-AIR broadcast.



PAN

The PAN enables positioning of the incoming caller signal. The range is not restricted in order to enable to position any incoming signal anywhere in the stereo image.

CUE/SELECT/RING

Automatic pre-fade listening/post pan, or cue, allows a caller to be heard without being in the broadcast. When activating the cue switch, the caller is connected to the CUE bus and listens to the talk back MIC of the engineer (fader closed).

The CUE switch shows an incoming call by a flashing CUE LED. Hitting the CUE switch makes a connection as described above. A remote switch can pick up a call by wiring the remote connector of the Telco module.

The 'ON' switch works in conjunction with the fader switch.
If the green LED is on, the channel is 'active'.

There are two methods of activating an incoming call:

A. If the 'ON' switch is pressed, the green ON LED and the "CONNECT" LED will illuminate and the caller is connected to the Telco module but not yet heard in the broadcast because the fader is still down.

By opening the fader, the Telco module will be activated and the signal will enter the program. When the fader is closed again the program signal will be muted, when the fader is at its lowest position.

B. When the 'ON' switch is not pressed, no LED is illuminated even if the fader is now opened. In this situation, none of the signals are active but as soon as the ON switch is activated (with a flashing CUE/RING switch) the caller will be "On-AIR". All switching is carried out electronically and free of noise for years to come.

If the CUE function is active, it will be disabled when the channel is activated.

NOTE: In the Telco module it is not possible to "Cue" when the channel is up and the module is ON.

FADER

The Airlab is fitted with a modern ultra-smooth linear fader controlling a high quality VCA and the Airlab internal logic circuitry. This system eliminates any noise from disturbing the audio signal path. When the fader is closed, the signal will be automatically muted, which provides excellent fader attenuation in excess of 100dB.

6.1 COMMUNICATION WITH TELCO MODULE

ENGINEER TO/FROM TELCO

Communication with the engineer is easily accomplished by activating the CUE switch in the Telco module. An open communication is achieved now between caller and engineer.

ANNOUNCER TO/FROM TELCO

The CUE switch on the Telco module has to be activated. The moment the Announcer hits his cough switch communication takes place between announcer and caller (Telco module).

There are several software programmable functions available here. In chapter 14 you can find detailed information about the programmable options of the Airlab.

ALIGNMENT OF THE CHANNEL

With the fader closed (or muted channel) the CUE switch will be activated; the CUE to CRM function in the master section must be activated. The gain control is used to adjust the level of the incoming signal until a 0 dB reading is achieved. If the 'ON' switch is now activated, the signal level will be nominal. When the fader is opened, the CUE signal will be automatically reset (turned off), and its associated LED will be switched off.

The CUE signal can be heard in two ways:

1. Through the stereo Control Room Monitors by activating the CUE to CRM function in the master section. If the CUE is activated in one of the channels, the CRM and meters will be activated without interruption of the main output.
2. By way of an externally connected CUE amplifier with loudspeaker.

7 MODULE CONNECTORS

MIC Input / From Hybrid

Connector type is female XLR:
Pin1 = ground
Pin2 = in phase
Pin3 = out of phase

LINE A LEFT / DIG-IN (AES3) / WALL

Connector type is female XLR:
Pin1 = ground / ground
Pin2 = in phase / A (wire)
Pin3 = out of phase / B (wire)

LINE A RIGHT / DIG-OUT (AES3) / TO PHONE (this XLR is a Male for digital)

Connector type is (fe)male XLR:
Pin1 = ground/ground
Pin2 = in phase / phone line A-wire
Pin3 = out of phase / phone line B wire

The input impedance for 'Phone' is optimized for correct loading of modern telephone stations.

LINE B INPUT / DIG-B IN/OUT (S/P-dif) / TELCO OUTPUT

Connectors are Cinch:
Cinch A= left in / DIG-OUT / Telco out, in phase (+)
Cinch B= right in / DIG-IN / Telco out, out of phase (-)

REMOTE

The remote connector lets you activate the CUE of the module / Telco module when the module is in its "off" or "standby" mode.

An ON LED can be connected to the remote to indicate the "ON" status of the Telco module. The same LED indicates incoming calls by flashing.

REMOTE - Input

Connector type is jack:
Tip = Channel "ON" LED
Ring = CUE control
Sleeve = Ground

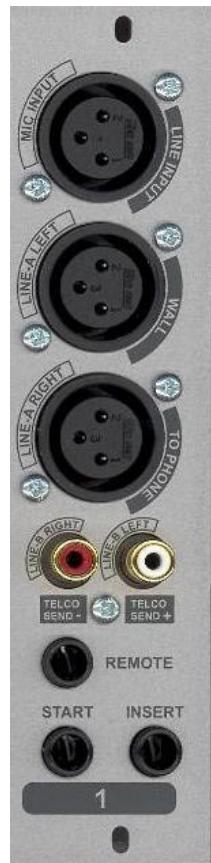


Figure 1: The connections on a module

START

Connector type is jack:
REED RELAY MAX VOLTAGE 24VOLT/50mA
Tip = Center contact
Ring = Normally open
Sleeve = Normally closed

MIC INSERT

Connector type is jack:
Tip = Channel SEND
Ring = Channel RETURN
Sleeve = Ground

8 MASTER SECTION

TAPE SEND

This section of the master houses the switches and controlling what's going to the tape outputs.

A selection can be made between three outputs of the Airlab. With all switches up the main program signal is recorded. As soon as one of the other switches is pressed, the corresponding FROM SUB or FROM AUX. output signals are recorded.

NOTE: *With this circuitry it is possible to record stereo sources from the channels assigned to the sub buss during broadcast.*

AUX OUT STEREO

This is a stereo output of the AUX masters. The level is +6dBu.

The corresponding talk back switch sends the talk back signal to both outputs.



Figure 2: The Master Section

NOTE: *Overall level of Aux. outputs also affects the talk back level for these outputs only.*

CRM

The CRM is normally following the Program output unless one of the input bank switches is active.

EXT(ERN)

This stereo input can be used for any stereo source that needs to be monitored in the CRM outputs. The input level is set to be 0dBu.

AUX

This input source switch lets you listen to the stereo Aux. outputs.

(FROM) AIR

This is the input select for the CRM/phones output. Either the program mix is heard in the CRM/phones or the 'from air' signal.

(FROM) SUB

This is a stereo switch bringing the Sub output into the CRM/phones output. It will override the 'from air' and other selected sources when selected.

CUE BALANCE

The CUE balance pot continuously adjusts the balance between the stereo CUE signal and the stereo input selection made with the switches described above.

(AUTO)CUE

This LED indicates that both CRM outputs are automatically connected to a selected CUE switch in stereo. When this LED is not active the CRM will monitor the main program outputs. The CUE signal will always be present at the CUE output jack when programmed.

PHONES LEVEL

This controls the overall level of the stereo headphones output.

A headphone socket is conveniently placed just beneath the armrest.



CRM

The control room monitor controls the outgoing level to the control room monitors. The level is +6dBu on a cinch connector. A mute LED indicates when the CRM is muted. This is the case when the Airlab is used as "self op" mixer. The DJ channel forces the CRM to mute when the Microphone is active in the control room itself. This is software configurable.

TALKBACK

This section houses most of the controls needed to communicate with every connected source to the Airlab. Communication is one of the most important parts of a broadcast, inside and outside the console. We have done a great deal of thought concerning this part of the console.

The talk back microphone is a built in Electret microphone with its associated level control. The mic-amp is protected against clipping.

The talk back switches are momentary so leaving talk back mics open is a thing of the past. The talk back mic can be assigned to several outputs at the same time when more than one switch is activated. The Studio, Guest and Announcer outputs are driven post their volume controls, so communication is always possible. Talk back to the SUB output is possible with the talk back switch positioned in the SUB section of the master.

STUDIO

In the Studio area are three monitor systems, which can be used as needed in your studio situation.

The studio output will give a stereo signal fed from the "PROGRAM" signal or from one of the selected other input sources, such as (from)AIR, (from)SUB or the CRM. The associated MUTE LED indicates that a microphone is opened in the Studio area avoiding feedback. The programming of this function is under software control.

The Studio Talkback switch instantly injects the talk back signal from the internal Electret microphone into the studio output independent of the studio level settings.

The studio output can be used as an overall output to monitor what's going on during broadcast in the studio room itself.

The studio output is wired to a stereo cinch connector.

**GUEST**

The GUEST output is stereo and follows the program signal unless the input selection of "from AIR", "from SUB" or "From CRM" is activated. A separate stereo headphone output is provided for a guest and the talk back is always addressed to both earphones independent of level settings. The program material will be dimmed when the talk back is activated. The output is identical to that of the announcer and could therefore be used as a second announcer's output.

The Guest Talkback switch instantly injects the talk back signal from the internal Electret microphone into the GUEST output independent of studio level settings.

ANNOUNCER

The ANNOUNCER output is stereo and follows the program signal unless the input selection "From air", "From sub" or "From CRM" is activated. A separate stereo jack socket is provided for the announcer and the talk back is always addressed to both earphones independent of level settings.

The Announcer Talkback switch instantly injects the talk back signal from the internal Electret microphone into the Announcer output independent of studio level settings.

COM

A COM(munication) LED is placed nearby the Announcer control to indicate that the talk back is activated. This is accomplished by pressing the Cough switch on the SiCo remote box, when installed.

9 TIMER AND SYSTEM-SETUP

This part of the Airlab is actually the most interesting part.

In this section decisions are made and stored on memory cards for later retrieval.

There are two important systems active here.

1. Programming of your Airlab configuration.
2. Internal TIMER.

The following functions can be programmed per module:

- Module set as DJ mic input
- Module set as Announcer mic input
- Module set as Studio mic input
- Start/Stop plus Pulse/Continue per module
- CUE start active
- Fader start or/and "ON" start per module
- External remote (in)active per module
- Timer start pulse per module and per item
- On-Air control signal on/off per module and per item
- Auto Communication Announcer on/off
- Auto CUE reset on/off
- Auto CUE on/off



The exact programming will be dealt with in a separate chapter.

9.1 CUE RESET

Pressing this large switch resets all activated CUEs in all channels.

9.2 AIRLAB METERING

The Airlab is shipped with 4 VU meters. The 2 meters on the left always follow the main program material and the 2 meters on the right side of the meter hood follow the CRM selectors.

NOTE:

The following levels should be used for a suitable sound pressure, for music, talk shows and interviews etc.

Music:	up to 0 dB
Speech:	up to +3 dB
Telephone:	up to +3 dB

A mild compression such as 2:1 with slow attack and a threshold of -6 dB to limiting around +8 dB will improve the relationship between different broadcast materials.

NOTE:

These are average settings only, presentation of modern pop music will certainly require alternative settings.

The levels of the Digital Outputs depend on the internal level trimmers on the Airlab Dig Module. A factory default is set to: 0dBu = -9dBFF.

10 BACK PANEL CONNECTORS

The connector back panel of the master section has all the in/outputs to interface with external equipment and a PC.

SPARE 1 - 4

We have integrated 4 openings, which fit spare XLR connectors for "do it yourself" purposes. An activity extremely loved by in-house technicians.

Below these spare openings are the power on/off switch, a power inlet and the ground connector of the console to be used as central star ground point for the studio.

The other two sections are described on the next page.

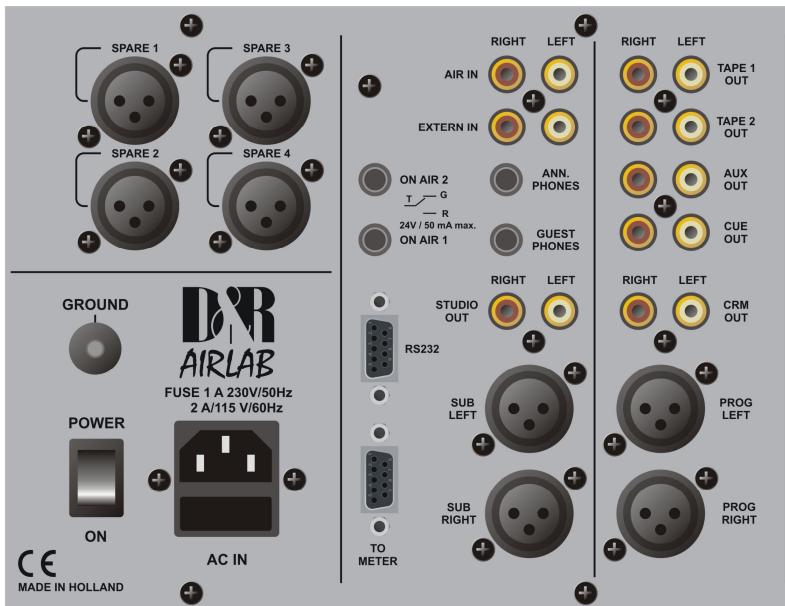


Figure 3: The connections on the Master Section

=====
***The mains input is set for 230 volt 50/60 Hz.
The Airlab can be set to 115 volt only by qualified technicians***
=====

EXTERN IN/AIR IN

The next section shows the left and right input Cinch connectors for the EXTERNAL and AIR in signals.

FROM AIR is the stereo input for controlling the off air signal coming from a receiver. Input sensitivity is either 0 dBu.

GUEST/ANNOUNCER

The next connectors on the right are the stereo GUEST and ANNOUNCER headphone outputs on stereo jack sockets.

ON AIR 1/2

On the left side of these jacks are the ON-AIR 1 and ON-AIR 2 jacks.

The ON-AIR signaling jacks are connected to reed relays driven by the logic of the input channels as described in the channel sections of this manual.

When using the channel in the DJ mode it is possible to operate and be an ANNOUNCER at the same time.

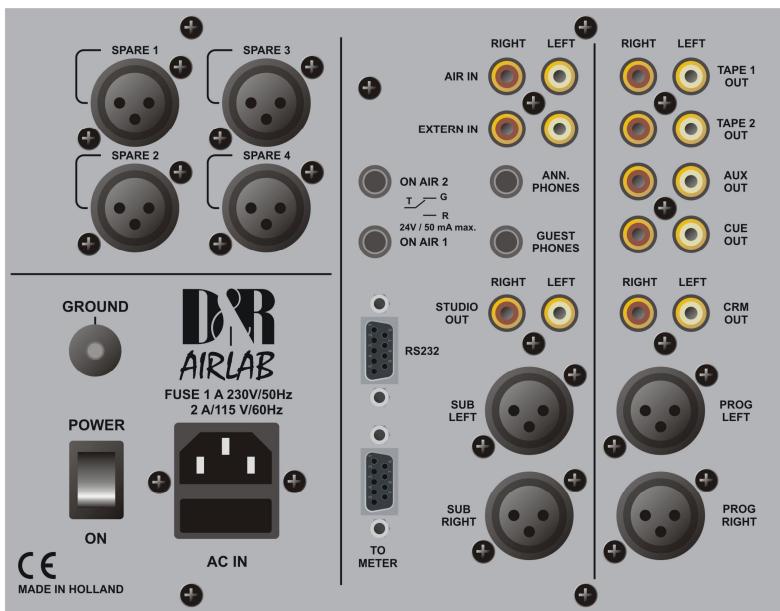
If the DJ mic is ON or CUE'd, the CRM is automatically muted.

Modules can be connected via programming to the centralized ON-AIR signaling connector. We advise you to use an externally connected solid-state relay. A suitable model is the S 201-8 04 from Sharp, which switches 220 Volts/1.5 Amp click-free. A solid-state relay is much safer to use and is more reliable. The ON-AIR 1/2 output can be connected directly to the S 201-8 04 relay in series with an external 12-volt DC power supply.

Connector:	Tip = Center contact (maximum 24V/50mA)
	Ring = Normally open
	Sleeve = Normally closed

NOTE:

These signaling outputs are only to be used for low voltage applications!



STUDIO

The two Cinch connectors are the unbalanced Studio outputs. The level is +6 dBu at 47 Ohm.

SUB OUTPUTS

These outputs are electronically balanced and wired to male XLR outputs.
Output level is +6 dBu at 47 Ohm. (Transformers are optional)

RS232

This computer type connector is the interface between the Airlab and a PC. Through this connector and the delivered software it is possible to program the Airlab on your PC.
Chapter 14 will give you detailed information about this programming.

TO METER

This SubD9 connector provides power and signal to all 4 meters.

MORE OUTPUTS

In this section of the master back panel you find the following output connectors.
Tape-1 out stereo, Tape-2 out stereo, AUX. out stereo, CUE out stereo, CRM out stereo and PROGRAM left/right.

PROGRAM OUTPUTS

The Airlab contains two electronically balanced outputs that can be transformer balanced as an option. Both outputs shall have their own line output amps with high quality output transformers as an option. The output level is +6 dB at 600 Ohm when the meter reads 0 dB.

Connectors are XLR male:

Pin 1 = ground
Pin 2 = in phase
Pin 3 = out of phase

If the Airlab is required to drive unbalanced equipment, Pins 1 and 3 must be shorted.

PHONES OUTPUT

The engineer's stereo headphone output shall also be used as DJ output.

NOTE: DO NOT use headphones with an impedance lower than 200 Ohm. 600 Ohm is preferable. The jack is positioned on your right hand side under the armrest.

Connector type is stereo jack plug:

Tip =	left
Ring =	right
Sleeve =	ground

11 AIRLAB MASTER BACK PANEL WIRING

EXTERN IN

Connector type is Cinch. Unbalanced, level = 0 dBu 10 kOhm

AIR IN

Connector type is Cinch. Unbalanced, level = 0 dBu 10 kOhm

GUEST OUT STEREO

Connector type:	Jack	Tip =	Left
Level:	+20 dBu/330 Ohm	Ring =	Right
		Sleeve =	Ground

ANNOUNCER OUT STEREO

Connector type:	Jack	Tip =	Left
Level:	+20 dBu/330 Ohm	Ring =	Right
		Sleeve =	Ground

ON AIR SIGNALING 1

Connector type:	Jack	REED RELAY MAX VOLTAGE 24 VOLT/50 mA
		Tip = Center contact
		Ring = Normally open
		Sleeve = Normally closed

ON AIR SIGNALING 2

Connector type:	Jack	REED RELAY MAX VOLTAGE 24 VOLT/50 mA
		Tip = Center contact
		Ring = Normally open
		Sleeve = Normally close

STUDIO OUT

Connector type:	Cinch, Unbalanced
Level:	+6dBu / 47 Ohm

SUB OUTPUTS

Connector type:	Male XLR	Pin1 = ground
Level:	+6dBu	Pin2 = in phase
		Pin3 = out of phase

RS 232

Connector type:

SubD9 Male
1 = CD (Doesn't need to be connected)*
2 = TD
3 = RD
4 = DTR (Doesn't need to be connected)*
5 = gnd
6 = DSR (Doesn't need to be connected)*
7 = RTS (Doesn't need to be connected)*
8 = CTS (Doesn't need to be connected)*
9 = NC
* (Some PC's require connection instead)

METER

Connector type:

SubD9 Female
1 = CRM-right (feeds meter right)
2 = ground
3 = External CUE LED drive
4 = ground
5 = Program right signal
6 = CRM left signal
7 = +18 volt
8 = -18 volt
9 = Program left signal

TAPE 1 OUT STEREO

Connector type: Cinch

Level: 0 dBu/100 Ohm

TAPE 2 OUT STEREO

Connector type: Cinch

Level: 0 dBu/100 Ohm

AUX OUT STEREO

Connector type: Cinch

Level: +6 dBu/100 Ohm

CUE OUT STEREO

Connector type: Cinch

Level: +6 dBu/100 Ohm

CRM OUT STEREO

Connector type: Cinch

Level: +6 dBu/100 Ohm

PROGRAM OUTPUTS

Connector type: Male XLR

Level is: +6 dBu

Pin 1 = ground

Pin 2 = in phase

Pin 3 = out of phase

PHONES OUT STEREO

Connector type: Jack

Level: +20dBu/330 Ohm

Tip = Left
Ring = Right
Sleeve = Ground

12 AIRLAB JUMPER SETTINGS

12.1 TRIPLE INPUT MODULE

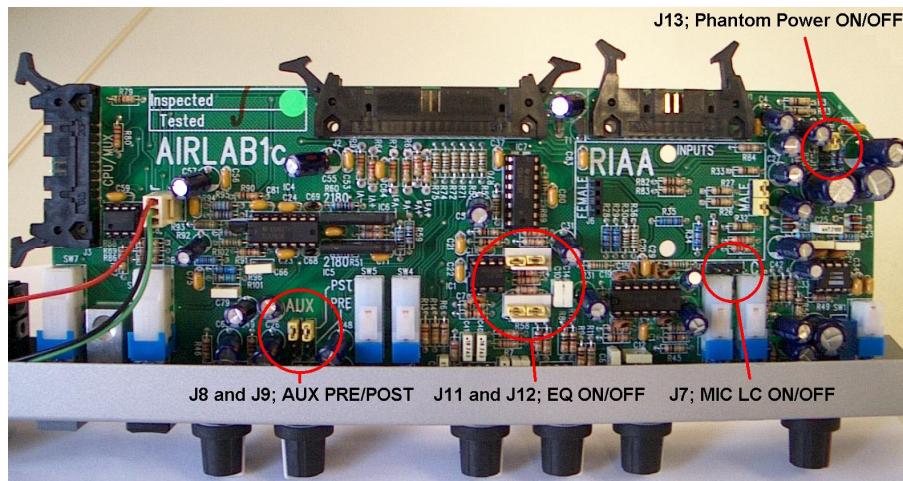


Figure 4: Airlab Triple Module Jumper Locations

Options	Jumpers	Settings	Settings	Default
AUX PRE/POST	J8 and J9	1 + 2 = POST	3 + 4 = PRE	POST
LC MIC only	J7	1+2 / 3+4 = ON	No Jumper = OFF	OFF
48 volt Phantom	J13	1 + 2 = OFF	3 + 4 = ON	OFF
EQ ON/OFF	J11 en J12	1+2 / 3+4 = ON	2+3 / 4+5 = OFF	ON

Table 1: Airlab Triple Module Jumper settings

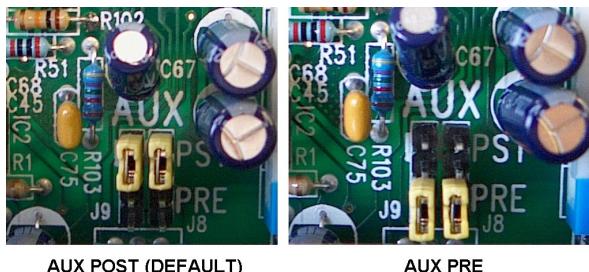


Figure 5: Triple Module AUX Jumper settings

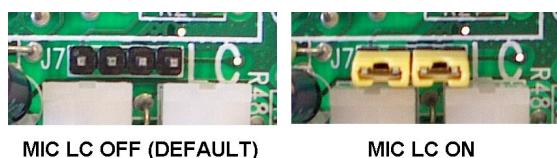


Figure 6: Triple Module MIC LC Jumper settings

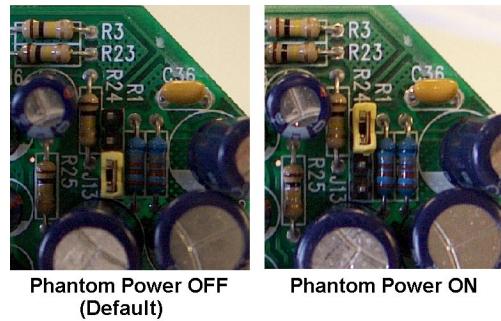


Figure 7: Triple Module Phantom Power Jumper settings

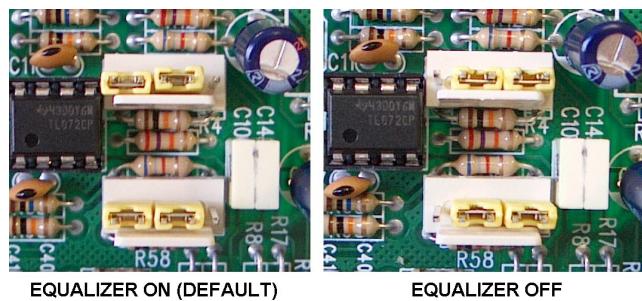


Figure 8: Triple Module EQ Jumper settings

NOTE: An optional R.I.A.A. phono pre amp can be plugged in here. The 'B' input of the channel can thus be connected directly to a phono cartridge. Jumpers should be removed from the channel completely.

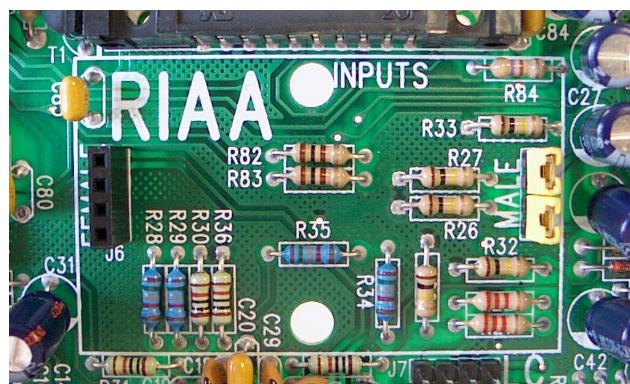


Figure 9: R.I.A.A connection on Triple module

12.2 TRIPLE DIG INPUT MODULE

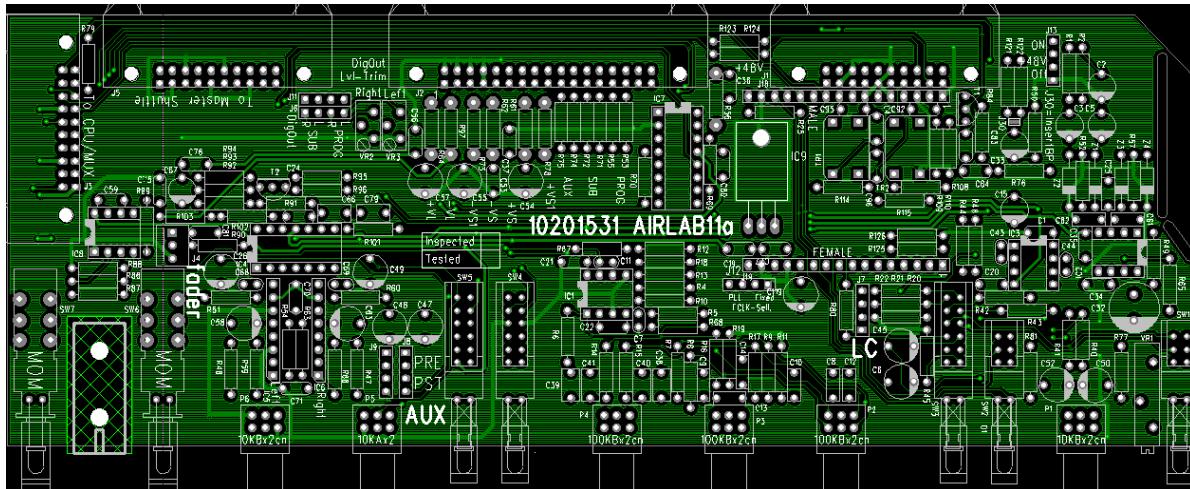


Figure 10: Airlab Triple Dig Module Jumper Locations

Options	Jumpers	Settings	Settings	Default
AUX PRE/POST	J8 and J9	1 + 2 = POST	3 + 4 = PRE	POST
LC MIC only	J7	1+2 / 3+4 = ON	No Jumper = OFF	OFF
48 volt Phantom	J13	1 + 2 = OFF	3 + 4 = ON	OFF
Dig-Output	J11 en J6	1+1 / 2+2 = SUB	3+3 / 4+4 = PROG	Prog
FCLK Select	J12	1 + 2 = Fixed	3 + 4 = PLL	Fixed

Table 2: Airlab Triple Dig Module Jumper settings

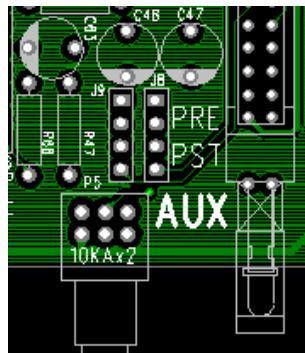


Figure 11: Triple Dig Module AUX Jumper settings

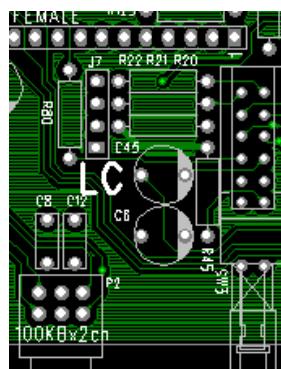


Figure 12: Triple Dig Module MIC LC Jumper settings

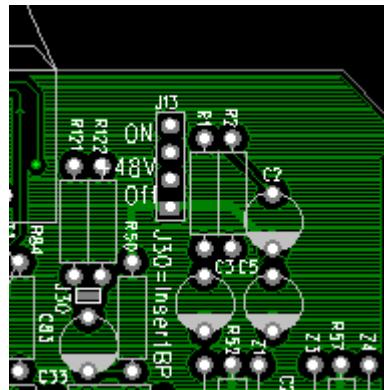


Figure 13: Triple Dig Module Phantom Power Jumper settings

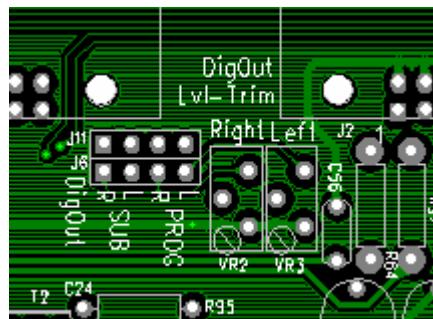


Figure 14: Triple Dig Module Digital Output Select Jumper and Digital Output Level trim



Figure 15: Triple Dig Module FCLK-Select (PLL or Fixed)

Digital Output settings:

Dependent on the jumper setting the output is giving the stereo PROG signal or the stereo SUB-signal. Normally the output level is -9dBFS but the level (headroom) can be adjusted by VR2 and VR3.

The digital output frame clock (sample rate) can be setup in two different ways by an internal jumper setting.

- 1: PLL. Output Frame Clock (sample rate) is identical to the clock signal of the digital input (Select by the 'Line B' switch, 32..96 kHz). If the digital-input is not in lock (no input signal or a wrong signal) the Output Frame Clock will jump back to 44.1kHz.
- 2: Fixed. Output Frame Clock (sample rate) is always 44.1kHz

ATTENTION: In the 'PLL' mode the digital output signal will be muted shortly if you change the digital input selection ('Line B' switch) or if the digital input loses its lock.

12.3 TELCO MODULE

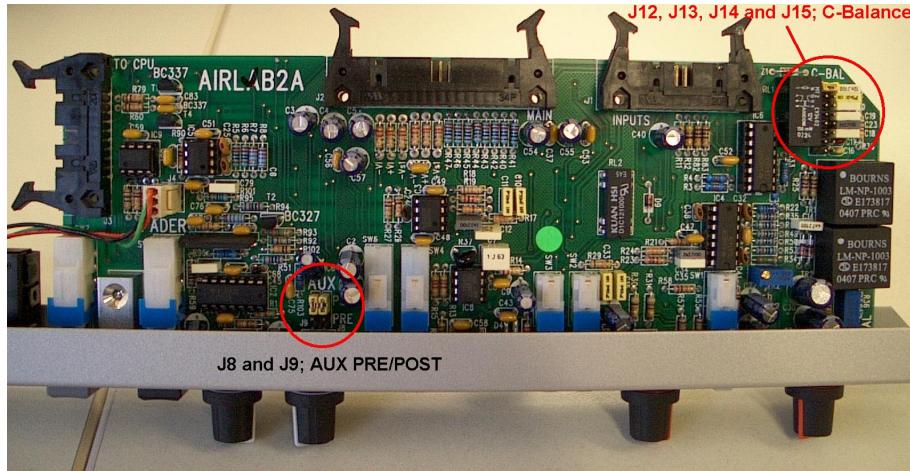


Figure 16: Airlab Telco Module Jumper Locations

Options	Jumpers	Settings	Settings	Default
AUX PRE/POST	J8 and J9	1 + 2 = POST	3 + 4 = PRE	POST

Table 3: Airlab Telco Module Jumper settings

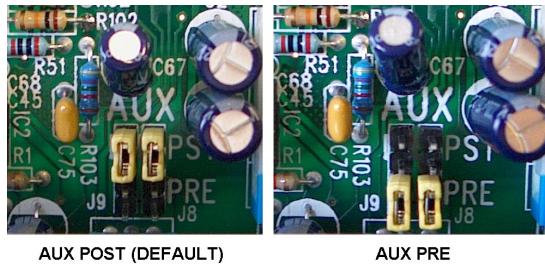


Figure 17: Telco Module AUX Jumper settings

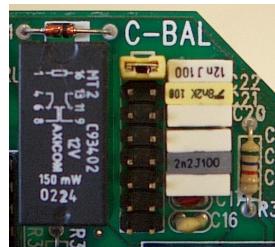


Figure 18: Telco Module C-Balance Setting

OPTIONAL

It's optional to install High quality transformers on the PROGRAM outputs and on the SUB outputs. Please contact your dealer for further information.

13 INSTALLING/SERVICING THE AIRLAB

Mains

Please check that the local mains supply corresponds with the voltage selected on the Airlab mains inlet. The Airlab can be factory set for voltages between 100 - 120 Volts or 220 - 240 Volts. The Airlab is fused with a 2 Amp slow blow fuse for 110 Volt or 1.0 Amp slow blow fuse for 220 Volt. DO NOT use any other value, as this would be hazardous and the Airlab guarantee will be voided.

Clean Power Connection

Be sure to use a 'clean' power outlet, i.e. one that is fed directly from the mains, including earth. Only connect the Airlab to this outlet and its associated equipment. This will act as the centralized mains and earth for the studio.

It is advisable to install several multiple mains connectors close to the Airlab, with a master power switch to shut down all power to the studio. Grounding MUST BE a star ground system.

Keep all wires as short as possible and never install audio next to power cables.

"Polluted" mains are caused by changing currents on the outlets, such as air-conditioners, coffee machines, fridges, computers, dimmer packs etc. DO NOT connect any of these types of items to the Airlab main power outlet.

Wiring

In cases where all the equipment is transformer balanced, it's usual to connect the shielding of the wiring to the source side only.

In the Airlab, many of the sources will be unbalanced, so a different strategy needs to be adopted. Equipment, such as CD players, doesn't have a mains ground connection. In this case the shielding can be connected on both sides of the connection. There won't be a ground loop. Try to choose a CD player with metal housing. If you experience problems with the transmitter interfering with the CD sound, connect the CD housing to a ceramic capacitor of 0.01 uF/250 V to the mains earth.

Audio Connections to the Airlab

Prior to commencing wiring of the studio, it is advisable to obtain some labels, which will simplify troubleshooting. (Example; "CD-1, CH 2A")

The first step is to connect the Airlab to the mains, with all faders closed, no CRM active and the CRM volume controls fully clockwise.

- A. Connect the CRM amp to the CRM output, and check whether there's any 'hum' or 'noise' noticeable.
- B. Now connect the phono players, and check again for 'hum' and 'noise'.

NOTE: In most cases it is a matter of finding the best grounding for the phono ground by trial and error. This might be directly to the audio ground or to the chassis of the Airlab.

- C. Now connect Tape deck, Cart machines, CD/MD players etc.

NOTE:

Wiring a tuner needs special attention. If the tuner is "cabled", the coax antennae cable will probably cause a ground loop. A H.F. transformer must separate the antenna input of the tuner. Ask your dealer or any radio shop for details.

IMPORTANT

SAFETY PRECAUTION - All 'outside' connections to the Airlab, even from the same building, must be connected via a transformer. This avoids the possibility of ground loops and 'hums'. The shielding must be connected to the source side.

In areas with a strong H.F. interference, it is wise to connect the other side of the shielding through a 0.1 uF/250 Volt ceramic capacitor. The capacitor will not affect the audio, but will reduce H.F. signals.

Servicing the Airlab

- A. Disconnect the mains supply.
- B. Remove the power cable from the back of the console.
- C. Remove the back panel of the meter hood.
- D. Unscrew the channel module bolts.
- E. Now lift the channel up at the fader section, and then the other side. Carefully lift the module until you see three connectors mounted to ribbon (flat) cables.
- F. On the PCB part of the connector you will see two ejectors with which to eject the cable header.

Installing the Channel Module

- A. Plug the three ribbon cable connectors into the PCB connector, ensuring that the ejectors are securely replaced.
- B. Slowly put the module down into the chassis starting from the rear.
- C. Tighten all screws and reconnect the channel.

Servicing the Master Section

- A. Disconnect the Airlab from the mains supply.
- B. Remove all holding screws.
- C. Lift the master section starting from the fader's side.
- D. Remove the connector to the power PCB.
- E. Lift the section upwards until you are able to remove the ribbon cable from the PCBs.
- F. Reverse this procedure to re-mount the master section.

INSTALLING / ALIGNMENT OF THE TELCO MODULE

- A. Connect the telephone line with the 'TO PHONE' labeled female XLR and a phone appliance to the female XLR labeled WALL. (See connector pages)

ALIGNMENT OF N-1 (MixMinus)

NOTE: This alignment has already taken place at the factory, however if you later on extend the AIRLAB with another TELCO module you need to follow the next steps for a correct alignment of the N-1 signal for every new installed TELCO module.

1. Power down the AIRLAB.
2. Connect the TELCO module to the right connectors and horizontally lay down the module on the surface of the other modules. Put an isolating material between the TELCO module and the surface of the other modules to avoid damage and shorts. Now locate trimmer VR2 (close to switch "LINE")
3. Activate the 'LINE IN' switch on the TELCO module.
4. Connect an audio source to the LINE IN connector, this can be music or a signal generator.
5. Connect a headphone or power amp to the TELCO SEND CINCH + connector.
6. Check again if there's no short between PCB of the TELCO module and the surface it's put on.
7. Power up the AIRLAB.
8. Move the fader to the 0 dB position. Press the ON switch. Press the PROGRAM switch.
9. CHECK if the CRM outputs this LINE IN signal (No CRM select switches are active) to be sure that you have correctly connected and routed your source.
10. Now adjust the trimmer VR2 to a position where a minimum of signal is heard out of the TELCO OUT Cinch + connector.
11. If you need to adjust the RC balance continue with step 1 of the procedure described below. Otherwise power down the console and install the module again properly.

ADJUSTMENT OF SIDETONE OR R/C BALANCE

The R/C is a one time only adjustment. Only in those situations where the TELCO module is connected to another telephone line a repeated adjustment could be necessary.

NOTE: The R/C balance trimming can only be performed after you have correctly followed the N-1 alignment procedure.

1. Power down the AIRLAB.
2. Connect the TELCO module to the right connectors and horizontally lay down the module on the surface of the other modules. Put an isolating material between the TELCO module and the surface of the other modules to avoid damage and shorts.
3. Connect an audio source to one of the modules and activate the **SUB switch only!!**
4. Connect the telephone system to the TELCO module's WALL connector.
5. Connect a Phone appliance to the "TO PHONE" connector.
6. Check if there is no short between PCB of the TELCO module and the surface it is put on.
7. Power up the AIRLAB.
8. Now dial on the connected Phone appliance a number outside the building.

9. Move the TELCO modules fader to its 0 dB position. Press the ON switch and activate the **PROG and SUB switch** only. The LINE IN switch should be off (up).
10. CHECK if the CRM outputs this PHONE IN signal coming from the PROG buss, (No CRM select switches are active) to be sure that you have correctly connected and routed your source.
11. Now open the fader on the channel where you have connected your audio and Press the ON switch on that channel.
12. Now you shall hear the audio signal through the TELCO module that is fed from that channel.
13. Now adjust the front panel trimmer VR1 (labeled R-BAL) to a minimum audio position and look for the best combination of C jumper settings and trimmer position.
14. Power down the console and install the module again properly.

As long as the hybrid remains connected to the same "Phone Company", no changes need to be made to this setup. If more TELCO modules need to be aligned the same capacitor value shall be used for all modules so front panel trimming is the only trimming that is left to do for the other modules.

Try to by-pass the in house telephone system if possible. Otherwise it will be extremely difficult to achieve a good alignment. A direct connection with the incoming phone company gives best results.

NOTE: INSTALLATION OF NEW (EXTRA) MODULES

When installing new (extra) modules in your Airlab it's necessary to re-adjust the internal power supply voltages to guarantee a stable performance at all times.

More current is taken from the internal power supply because you have put in more modules now. It's necessary to adjust the power supply voltage to a precise level of 18 volts for both the positive and negative rails with all modules connected.

Adjustment is performed on the power supply PCB mounted on the bottom of the console located beneath the master section.

Power supply voltage is measured across the output terminals of the power supply PCB inside the console.

NOTE: If the power supply voltage is not adjusted to 18 volts again, it may be possible that certain logic functions may not work properly at all times.

14 HOW TO PROGRAM THE AIRLAB

As you might have noticed the Airlab has a LCD in the center section of the master panel with a number of switches positioned below that display.

If you turn on the Airlab you'll notice the following text in the display.

00:00:00

TIMER

This is the menu that's normally active. But before we go into this menu we need to program the Airlab conform to your requirements. This can be done without opening the frame. Very convenient, isn't it?

BEFORE YOU START TAKE NOTICE OF THE FOLLOWING INFORMATION

To save all the work you've done you simply hit the ENTER switch and all settings are stored in the internal memory of the Airlab. If you leave the modules set-up section with the ESC switch, all previously stored data (before you changed it) will still be active.

MAIN MENUS

To leave the timer menu you have to press the UP or DOWN switches in the center of the programming area. If you do this you'll notice the following four main menus.

TIMER (default)
MODULE SETTINGS
MASTER SETTINGS
SYSTEM

The sequence of these main menus can be different whether you hit the UP or DOWN button, but it will never be more than these four activities.

The Module settings for the Triple Line Module and de Triple Dig Module are the same and therefore you don't see a difference between the two models in programming.

14.1 MODULE SETTINGS

LINE A ENABLES START TIMER

To see what's under these names you hit the ENTER switch. Lets go to MODULE SETTINGS first and then hit ENTER. The following display on the right will be shown:
This option allows you to select one or more modules, which need to be able to activate the internal TIMER when in Line A input position.

LineA Timerstrt?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between starting the timer (LED on) and not starting the timer (LED off) in that module. This is a very quick way of programming.
If you have already programmed several modules, the moment you enter this menu the LED's located near the SELECT switch will light up on those modules that are programmed to start the TIMER (when the fader is up or the ON switch is activated).

LINE B ENABLES START TIMER

To enter the next programming possibility you simply hit the DOWN button again and you'll see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to activate the internal TIMER when in Line B input position.

LineB Timerstrt?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up, on those modules that are programmed to start the TIMER.

MIC ENABLES TIMER START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to activate the internal TIMER when in Mic input position. **Not available for Telco Module.**

Mic. Timerstrt?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up, on those modules that are starting the TIMER

LINE A ENABLES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse, when set in Line A input mode. **Always on for Telco module.**

LineA Start?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to trigger the fader start.

LINE B ENABLES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start, when set in Line B input mode.

Always on for Telco module.

LineB Start?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled for the Line B position to trigger the fader start.

MIC ENABLES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse, when set in Mic input mode. **Not available for Telco Module.**

Mic. Start?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to trigger the fader start when the MIC input is selected.

FADER ACTIVATES START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse when the fader is opened. **Always off for Telco module.**

Start by Fader?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to generate a fader start.

ON SWITCH GENERATES A START PULSE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse when the ON switch is activated. **Always on for Telco module.**

Start by On?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to generate a "start" by way of the ON switch.

CUE SWITCH GENERATES A START PULSE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to select one or more modules, which need to be able to give a start pulse when the CUE switch is activated. **Always on for Telco module.**

Start by Cue?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are enabled to generate a start by way of the CUE switch.

PULSE OR CONTINUE ON START CONNECTOR

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set the type of start signal on the Start jack of one or more modules. You can choose between Pulse and Continues. **Always Continues for Telco module.**

Pulse */ Cont 0?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are giving a Pulse on the start jack.

REMOTE CUE POSSIBLE IN LINE A MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set if the CUE must be activated by an incoming remote on one or more modules, when set in Line A input mode.

LineA Rem. Cue?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the CUE by a remote switch.

REMOTE CUE POSSIBLE IN LINE B MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set if the CUE must be activated by an incoming remote on one or more modules, when set in Line B input mode.

LineB Rem. Cue?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are programmed to activate the CUE by a remote switch in line B input mode.

REMOTE CUE POSSIBLE IN MIC MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set if the CUE must be activated by an incoming remote on one or more modules, when set in Mic input mode. This option is necessary for COUGH/COMM.

Not available for Telco Module.

Mic. Rem. Cue?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you had already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will go on, on those modules that are capable of activating the CUE by a remote switch when the MIC input is selected.

WHICH CHANNEL IS YOUR DJ CHANNEL

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules in DJ mode. **Not available for Telco Module.**

DJ. Module?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are set in DJ mode.

ON WHICH CHANNEL IS YOUR ANNOUNCER MIC

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one module in Announcer mode.
Note: you can't select more than one Announcer module.
Not available for Telco Module.

Ann. Module?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are programmed to be an Announcer module.

ON WHICH CHANNEL IS YOUR STUDIO MIC

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules in Studio mode. **Not available for Telco Module.**

Studio Module?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are programmed to handle the Studio MIC input.

ON AIR-1 ACTIVE FOR LINE A

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Line A input mode.

LineA On Air-1?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 1 relay when line A is selected.

ON AIR-1 ACTIVE FOR LINE B

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Line B input mode.

LineB On Air-1?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 1 relay when line B is selected.

ON AIR-1 ACTIVE FOR MIC

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Mic input mode. **Not available for Telco Module.**

MIC On Air-1?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function, they select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you had already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will go on, on those modules that are toggling the ON-AIR 1 relay when MIC is selected.

ON AIR-2 ACTIVE FOR LINE A

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-2 relay, when in Line A input mode.

LineA On Air-2?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 2 relay when line A is selected.

ON AIR-2 ACTIVE FOR LINE B

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-2 relay, when in Line B input mode.

LineB On Air-2?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 2 relay when line B is selected.

ON AIR-2 ACTIVE FOR MIC

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to toggle the ON-AIR-1 relay, when in Mic A input mode. **Not available for Telco Module.**

Mic OnAir-2?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are toggling the ON-AIR 2 relay when MIC is selected.

ON AT START UP

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to set one or more modules to be default ON when powering up the console.

On at Power up?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are turning to their ON mode when the power comes up.

MIC CONNECTED AT LINE A

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to hook up a Mic to Line A on one or more modules. The COUGH/COMMUNICATION feature automatically becomes available when the module is in Line A mode. **Not available for Telco Module.**

MIC at Line A?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting.

This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are assigned for MIC-mode in LINE A.

MIC CONNECTED AT LINE B

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This option allows you to hook up a Mic to Line B on one or more modules. The COUGH/COMMUNICATION feature automatically becomes available when the module is in Line B mode. **Not available for Telco Module.**

MIC at Line B?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are assigned for MIC-mode in LINE B.

REMOTE ON POSSIBLE IN MIC MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This allows you to operate the ON switch on one or more selected modules by corresponding remote, when the Mic input is selected. **Not available for Telco Module.**

MIC Rem. On?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the ON by a remote switch when the MIC input is selected.

REMOTE ON POSSIBLE IN LINE A MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This allows you to operate the ON switch on one or more selected modules by the corresponding remote, when the Line A input is selected. **Always off for Telco module.**

LineA Rem. On?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the ON by a remote switch.

REMOTE ON POSSIBLE IN LINE B MODE

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

This allows you to operate the ON switch on one or more selected modules by the corresponding remote, when the Line B input is selected. **Always off for Telco module.**

LineB Rem. On?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of activating the ON by a remote switch in line B input mode.

SWITCH START

To enter the next programming possibility you simply hit the DOWN button again and you will see a new item. See on the right what the LCD shows:

With this option active the module is always ON and operation On-switch will only trigger the start-remote. **Not available for Telco Module.**

Switch Start?

Toggle by SELECT

HOW TO PROGRAM

The SELECT switches in the modules have a dual function. They select the module you are programming and at the same time you can toggle between the active and not active setting. This is a very quick way of programming this function. If you have already programmed several modules, the moment you enter this menu again the LED's located near the SELECT switch will light up on the modules that are capable of Switch Start.

IMPORTANT INFORMATION

To save all the work you have done you simply hit the ENTER switch and all settings are stored in the internal memory of the Airlab.

Pressing the ESC switch instead will discard all the changed settings in the last session.

You have now completed the modules set-up and it is now time to go to the Master settings.

14.2 MASTER SETTINGS

To enter this part of the programming hit the EXIT button and you will see that the LCD returns to its TIMER menu.

Now hit the UP or DOWN switch again until you see the text MASTER SETTINGS. This brings you into the master settings menu. Now push the ENTER switch to enter the four master programming possibilities.

AUTO CUE RESET

Use the YES and NO button to switch 'Auto cue Reset' option on and off.

HOW TO PROGRAM

With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

Auto CUE Reset?

YES

CUE TO CRM

CUE to CRM is an option, which enables you to route the CUE signal to the CRM speakers.

HOW TO PROGRAM

With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

CUE to CRM?

YES

AUTO COMMUNICATION

When this feature is activated you can create a communication link from a remotely connected SiCo box to an announcer module.

To make this work the 'Mic Rem. CUE' option needs to be activated.

Auto Comm?

YES

HOW TO PROGRAM

With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

RS232

The RS232 option enables you to connect the Airlab to a PC. Basically The Airlab software is a graphical user interface version of the software structure inside the Airlab.

Enable RS 232?

YES

HOW TO PROGRAM

With the YES and NO switches you can activate or de-activate this option. Don't forget to confirm changes you made in software with the enter switch.

IMPORTANT INFORMATION

To save all the work you have done you simply hit the ENTER switch and all settings are stored in the internal memory of the Airlab.

Pressing the ESC switch instead will discard all the changed settings in the last session.

14.3 SYSTEM SETUP

You have now completed the master set-up and it is now time to go to the System settings. To enter this part of the programming hit the EXIT button to leave the master settings without saving changes or hit the ENTER switch to leave the master settings with saving changes.

The System menu consists out of 5 submenus, which are:

CONFIGURATION

RECALL

STORE

RECALL Memory CARD

(only visible with inserted memory card)

STORE Memory CARD

(only visible with inserted memory card)

Select these sub menus by pushing the UP or DOWN buttons.

CONFIGURATION

The first item in the System menu is the configuration screen. This screen displays the current configuration of the Airlab. XX represents the number of Stereo modules available on the console and YY represent the number of Telco modules available on the console.

Config

StMod:XX Telco:YY

RECALL

In the Recall menu you can recall a stored setup from the internal Airlab memory.

By pressing the ENTER switch the data will be recalled from the internal memory. Subsequently pressing the ESC switch, the Recall menu will be left without recalling.

Recall

Press Enter/Esc

STORE

In the Store menu you can store a setup to the internal memory. By pressing the ENTER switch the actual data will be stored to memory. Subsequently by pushing the ESC switch, the Store menu will be left.

Store

Press Enter/Esc

RECALL Memory Card

In the Recall memory card menu you can recall a stored setup from a Memory card. By pressing the ENTER switch the actual data will be recalled from an inserted memory card. Subsequently by pushing the ESC switch the Recall Memory card menu will be left.

Recall Mem. Card

Press Enter/Esc

STORE Memory Card

In the Store Memory Card menu you can store a set-up to an inserted memory card. By pressing the ENTER switch the actual data will be stored to an inserted Memory Card. Subsequently by pushing the ESC switch the Store Memory card menu will be left.

Store Mem. Card

Press Enter/Esc

All the above explained programming and storing of data can be performed on a Windows PC. You need to connect the RS232 SubD9 connector of the Airlab to the RS232 connector of your PC and load the Airlab software. All module and master programming can be dealt with on one PC screen. In this way you will have a total view of your settings on one screen. This can be edited and when you sorted out all your settings it can be downloaded to the Airlab's memory and subsequently stored on a memory card.

14.4 TIMER

As earlier mentioned the Airlab has a built in Timer, which is practical and easy to use. The Timer menu is the basic menu that the Airlab always shows.

To activate the timer it is necessary to first program the modules and make up your mind which modules and in which mode they should trigger the Timer.

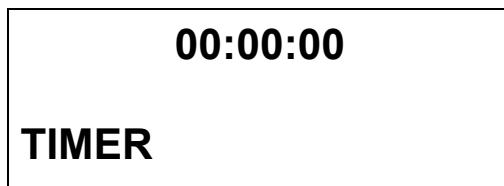
Any module that has been programmed to start the timer shall trigger the timer and the clock is running, reading from left to right: hours, minutes and seconds.

The moment you pull down a fader or switch an ON switch off the timer stops showing the exact time the module has been active.

As soon as you open the module again, the timer will be reset it and starts all over again.

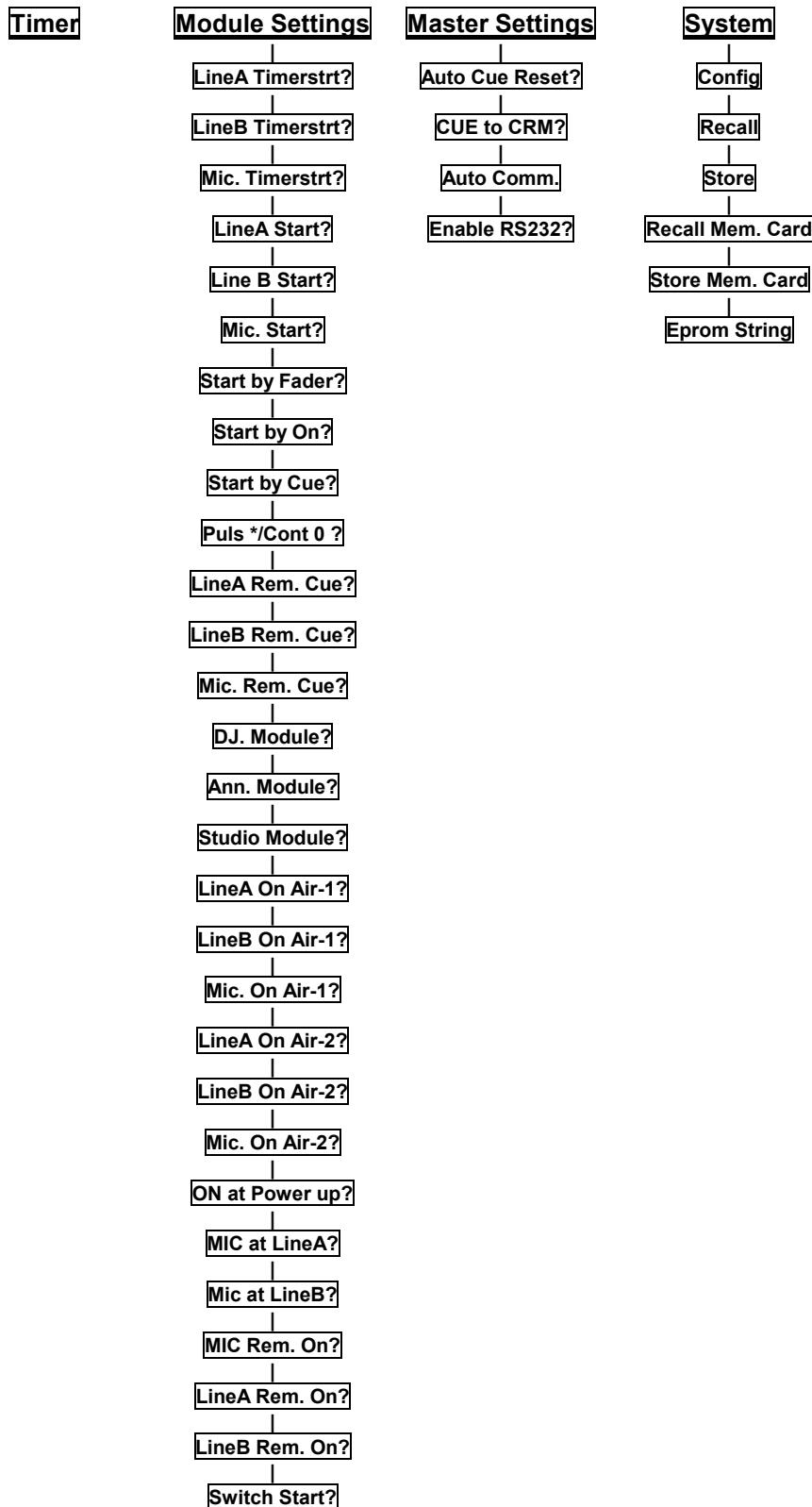
The Timer can also be started and stopped by the ENTER switch.
It goes like this:

1. With ENTER the timer will be reset and starts or continues to run.
2. With ESC the timer will be reset and when it runs it continues to do so.



14.5 MENU DIAGRAM

The menu diagram displays the menu structure as it is programmed in the Airlab.



15 Windows Software

The RS232 communication option enables you to manage the Airlab programming from a remotely connected PC. The main advantage is that this gives you a much better overview on all the available settings that can be made. All the custom settings made can be saved in a file. That way you can create your own presets.

The settings made can be saved to chipcard. Each user can have a personal chipcard with his or hers customized setting for the Airlab.

15.1 INSTALLATION

The installation software comes on a 3.5" floppy disk. Please run the setup.exe file to begin the installation.

During the setup you can choose the path for the installation directory.

During the installation process a program folder will be created together with a desktop icon. From these locations you can startup the application.

15.2 GETTING STARTED

Before you run the software be sure to connect the Airlab to the PC correctly. If this isn't the case you'll see the following error message:

Clicking the OK button continues to startup the Airlab application but without any software control.

The screen looks like this:



Figure 19: No Airlab found

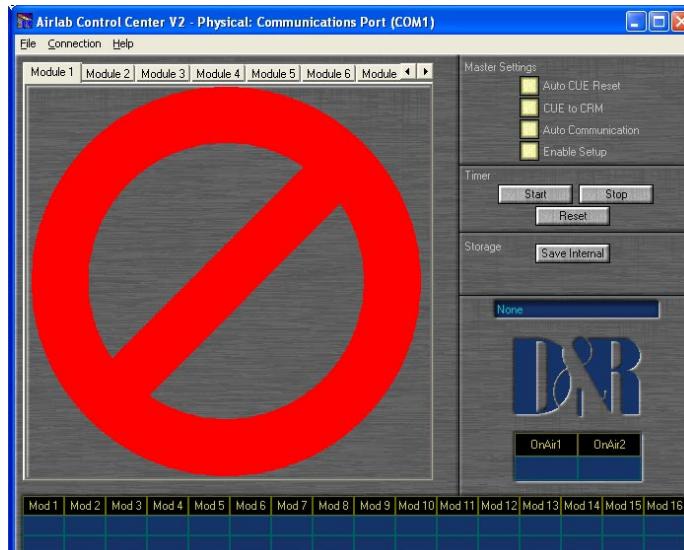


Figure 20: Airlab not connected

After you have connected the Airlab console correctly you have two options. You can reconnect to the Airlab using the 'Connection' menu or you can reboot the application.

If the Airlab is connected correctly you'll see the following screen (Figure 21). You'll notice that the screen is divided in multiple sections. Each section is individually discussed in this chapter.

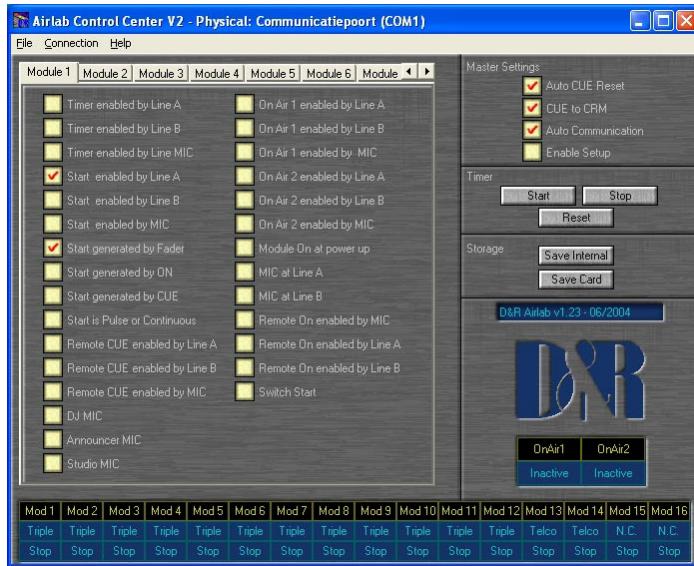


Figure 21: Airlab Main Screen

Figure 22 displays a summary of all the modules in the Airlab.

Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8	Mod 9	Mod 10	Mod 11	Mod 12	Mod 13	Mod 14	Mod 15	Mod 16
Triple	Telco	Telco	N.C.	N.C.											
Stop															

Figure 22: Status bar

As you can see we can have a total of 16 modules in the Airlab. The configuration, as shown in the second column, consists from 12 triple line modules and 2 Telco modules. The last two slots aren't used in this case. The third column represents the status of the start remote on the rear side of each channel.

The section displayed by Figure 23, displays the On Air status of the Airlab. There's also a small window in this section, which displays the software version present in the Airlab.



Figure 23: On Air Status

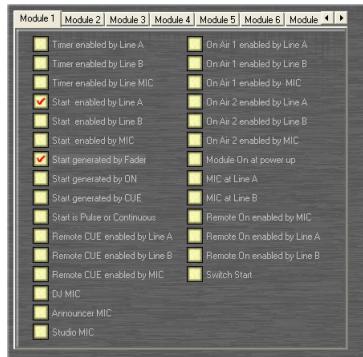


Figure 24: Triple Module Settings

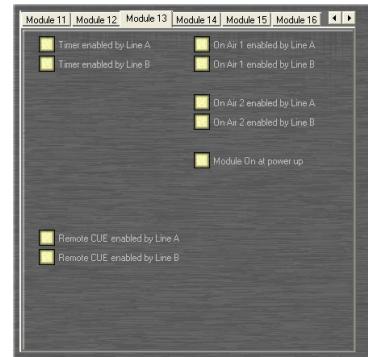


Figure 25: Telco Module Settings

Figure 24 and Figure 25 display the module settings for the Telco and the Line modules. Basically this is a graphical overview of the menu structure in the Airlab. The graphical user interface allows you to make changes very easily and very fast.

For a detailed overview off all module settings you can read section 14.1 of this manual.

The Master settings in the application are nearly identical to the Master setting of the Airlab. The main difference is the fourth option.

The fourth Master Setting in the Airlab is the Enable 'RS232' setting. This option enables or disables the COM port on the rear side of the airlab.

The fourth Master Setting in the application is the 'Enable Setup' setting. This option allows or denies users to enter the menu of the Airlab from the console. This is a protection feature.

For more detailed information on the Master Settings you can read section 14.2 of this manual.

The Timer section (Figure 27) allows you to control the Timer on the Airlab from the PC.



Figure 26: Master Settings



Figure 27: Timer



Figure 28: Storage

The Storage section (Figure 28) allows you to save the changes you made in the Airlab memory or on a chipcard. The 'Save Card' button is only available when a chipcard is inserted. The main advantage of the chipcard is that you can make presets for multiple users. And thanks to the 'Enable Setup' option you can make sure that they won't mess around with the settings in the console.

The File => Save and the File => Open options allow you to save the changes you've made to one or more files so that you can re-open them later again to restore your personal setting again.

16 SPECIFICATIONS

INPUTS:

Mic inp. bal. 2 kOhm - 128 dBr (+/- 40 dB gain range plus 30 dB of trim range).

Line inp. bal 10 kOhm +/- 20 dB gain range.

Insert level: -10dBV

Telco input (XLR) 10 kOhm bal. +4 dBu nominal.

CMRR: mic input max. gain: 1kHz 85 dB.

Line input max. gain 1 kHz 30 dB.

EQUALISATION:

+/- 12 dB @ 10 kHz shelving.

+/- 12 dB @ 1 kHz bell curve.

+/- 12 dB @ 60 Hz bell curve.

Low Cut: 80 Hz, 12 dB per octave (Mic only)

Low Cut: 200Hz, 6 dB per octave (Telco only).

High Cut: 8 kHz, 6 dB per octave (Telco only).

OUTPUTS:

Program left/right: +6 dBu electronically balanced (transformer balancing optional).

Sub: +6 dBu electronically balanced. (transformer balancing optional)

All other outputs: +6 dBu unbal.

OVERALL:

Frequency response: 20-20.000 Hz +/-0.5 dB.

Harmonic distortion: 0.035% (VCA in, 2nd harm).

Crosstalk: less than -90 dBr.

Noise: -86 dBr.

Headroom: +22 dB internal, 20 dB on outputs.

Mix-Minus rejection: @1 kHz -60 dB.

Channel fader attenuation: 1 kHz, 100 dB.

WEIGHT: Airlab loaded with 16 modules: 50 kg (110 lb).

DIMENSIONS

Drop though mounting 775 mm Width
 590 mm Depth

When inserting the Airlab in its mounting hole first position the armrest side in the hole and slowly lower the back side holding the wood ends on either side of the console. Mount the back panel after installation to finish the job neatly.

Color scheme before 2002:

Front panels: RAL 7012 / 9016

Frame: RAL 7016

Wood ends: RAL 7042

Color scheme after 2002:

Front panels: GISPEN 103

Frame: GISPEN 103

Wood ends: GISPEN 103

17 SICO REMOTE UNIT

The Airlab Sico Remote unit is designed to be the communication interface between the control room and the announcer or guest. It has a built in headphone amp, a remote connector to be wired via a shielded stereo cable to the related Airlab channel, and a very convenient COUGH/COMMUNICATION button.

We shall describe all functions in detail now.

COUGH/SIGNALLING IN MIC MODE

This useful feature has two important functions:

1. Cough/communication,
2. 'Mic-on'

1. Cough/Communication.

A shielded stereo cable has to be connected between the Sico remote unit and the Airlab input channel that needs to be communicated to.

Using the push-button during broadcast, the announcer can temporarily mute the microphone in order to cough (where the name comes from). At the same time his microphone will be routed to the cue system, in order to give him the opportunity to communicate with the engineer/producer.

2. 'Mic-on'.

When the channel is active a voltage is applied between Tip (+) and Sleeve (0V), which can be used to activate a LED (red) (in this case the internal LED of the SiCo remote unit).

In addition to the localized 'mic-on' signaling, there is also a master signal in the master section. The ON-AIR signaling outputs 1 and 2 offer the option of driving external red light indicators in the studio by way of a relay.

The input jack of the Sico Remote unit needs to be wired to the master of the Airlab, Guest or Announcer outputs or whatever suits your purpose mostly.

The output jack is a parallel jack to the input jack to simplify wiring to more than one SiCo remote unit in the presentation room.

18 DIRECTOR UNIT (discontinued)

The Director is designed to be the answer for the need of the Station manager to manage the live broadcast and have control over in and outputs as well as communication to all essential in and outputs of the Airlab ON-AIR mixing console.

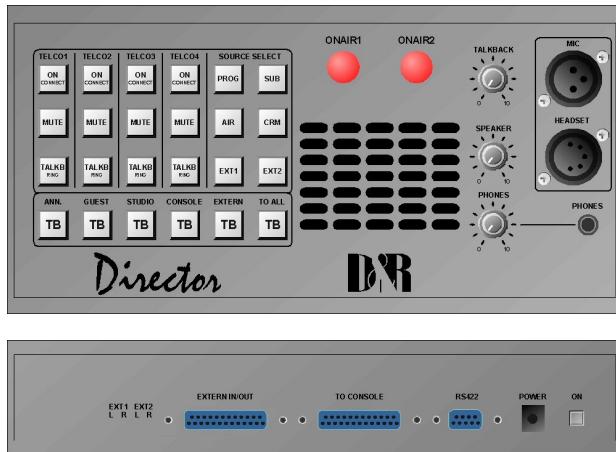


Figure 29: Director front and rear view

The director of the broadcast station can use the 'Director box'. By having this unit in front of him/her, he/she is capable of sending verbal instructions by Mic to the engineer, announcer, Guests and Studio or with one button to all outputs. There is also a Talkback output to and external output that can be used for local situations.

Listening to Program outputs, SUB outputs, On-Air signals, CRM output, External inputs 1 and 2 is of course possible.

Four Telco module incoming signals can be taken, talked to and muted if necessary. A standard 5-pole XLR connector is provided for the headset. A separate Mic input and headphone output is also available.



Figure 30: Director

Two large On-Air LEDs are indicating that the Airlab console is ON-Air.

Level control for Headphone, Mic input and internal speaker are provided for. The back panel has 4 adjustments for the Telco levels and all interfacing with the Airlab.

An external power supply is part of the package

Warning: The director option is only supported by Airlabs build after 01-01-2005. All Airlabs build before this date can be upgraded to support the Director. Please contact your dealer for further information.

19 LIST OF FIGURES

Figure 1: The connections on a module	28
Figure 2: The Master Section	29
Figure 3: The connections on the Master Section	34
Figure 4: Airlab Triple Module Jumper Locations	39
Figure 5: Triple Module AUX Jumper settings	39
Figure 6: Triple Module MIC LC Jumper settings	39
Figure 7: Triple Module Phantom Power Jumper settings	40
Figure 8: Triple Module EQ Jumper settings	40
Figure 9: R.I.A connection on Triple module	40
Figure 10: Airlab Triple Dig Module Jumper Locations	41
Figure 11: Triple Dig Module AUX Jumper settings	41
Figure 12: Triple Dig Module MIC LC Jumper settings	41
Figure 13: Triple Dig Module Phantom Power Jumper settings	42
Figure 14: Triple Dig Module Digital Output Select Jumper and Digital Output Level trim	42
Figure 15: Triple Dig Module FCLK-Select (PLL or Fixed)	42
Figure 16: Airlab Telco Module Jumper Locations	43
Figure 17: Telco Module AUX Jumper settings	43
Figure 18: Telco Module C-Balance Setting	43
Figure 19: No Airlab found	64
Figure 20: Airlab not connected	64
Figure 21: Airlab Main Screen	65
Figure 22: Status bar	65
Figure 23: On Air Status	65
Figure 24: Triple Module Settings	66
Figure 25: Telco Module Settings	66
Figure 26: Master Settings	66
Figure 27: Timer	66
Figure 28: Storage	66
Figure 29: Director front and rear view	69
Figure 30: Director	69

20 LIST OF TABLES

Table 1: Airlab Triple Module Jumper settings	39
Table 2: Airlab Triple Dig Module Jumper settings	41
Table 3: Airlab Telco Module Jumper settings	43

21 AIRLAB USER QUESTIONNAIRE

Dear Airlab user,

We care very much about your opinion of our product, and would very much appreciate if you could complete the following questionnaire, and return it to the address below. Please use the reverse, or additional paper if required.

USER NAME
ORGANIZATION
ADDRESS
TOWN
POST CODE
COUNTRY
EMAIL: info@d-r.nl.....

AIRLAB SERIAL NO:

.....
CONFIGURATION
DEALER

HOW DID YOU HEAR ABOUT THE "AIRLAB"? (please circle)
(Dealer / Advertisement / Exhibition / Other user / Other)

WHAT JOURNALS DO YOU TAKE ON A REGULAR BASIS?

.....
WHAT IS YOUR OPINION OF THE PRICE/QUALITY OF THE 'AIRLAB'?

.....
WHAT PRICE WOULD YOU CONSIDER SUITABLE FOR THE 'AIRLAB'?

.....
ANY OTHER SUGGESTIONS?

.....
I REQUIRE INFORMATION ABOUT

.....
WHAT OTHER EQUIPMENT DO YOU USE?

PLEASE SEND/FAX TO:
D&R Electronica Weesp bv, Rijnkade 15B, 1382 GS WEESP, The Netherlands
FAX: +31 294 416987 Email: info@d-r.nl

22 PRODUCT SAFETY

This product is manufactured with the highest standards and is double checked in our quality control department for reliability in the "HIGH VOLTAGE" section.

CAUTION

Never remove any panels, or open this equipment. No user serviceable parts inside. Equipment power supply must be grounded at all times. Only use this product as described, in user manual or brochure. Do not operate this equipment in high humidity or expose it to water or other liquids. Check the AC power supply cable to assure secure contact. Have your equipment checked yearly by a qualified dealer service center. Hazardous electrical shock can be avoided by carefully following the above rules.

PLEASE READ THE FOLLOWING INFORMATION VERY CAREFULLY

Especially in sound equipment on stage the following information is essential to know. Voltage and current cause an electrical shock. Actually it's the current that causes the shock. In practice the higher the voltage the higher the current will be and the higher the shock. But there is another thing to consider and it is resistance. When the resistance in Ohms is high between two poles, the current will be low and visa versa. All three of these; voltage, current and resistance are important in determining the effect of an electrical shock.

However, the severity of a shock is primarily determined by the amount of current flowing through a person.

A person can feel a shock because the muscles in a body respond to electric current. Current can also be fatal when it causes the chest muscles to contract and stop breathing.

At what potential is current dangerous? Well the first feeling of current is a tingle at 0.001 Amp of current. The current between 0.1 Amp and 0.2 Amp is fatal. Imagine that your home fuses of 16 Amp can handle 200 times more current than is necessary to kill.

How does resistance affect the shock a person feels? A typical resistance between your two hands "dry" condition could be well over 100,000 Ohm. But if you are playing on stage your body is transpiring extensively and your body resistance is lowered by more than 50%. This is a situation in which current can easily flow.

Current will flow when there is a difference in ground potential between equipment on stage and in the P.A. system. Please do check if there is any potential between the housing of the mics and the guitar synth amps, which will be linked by your body on stage.

Imagine, a guitar in your hand and your lips close to the mic! A ground potential difference of above 10 volts is not unusual. In improperly wired buildings it can possibly be as high as 240 volts. Although removing the ground wire sometimes cures a system hum, it'll create a very hazardous situation for the performing musician.

Always earth all your equipment by the grounding pin in your mains plug Hum loops should be only cured by proper wiring and isolation input/output transformers.

Replace fuses always with the same type and rating after the equipment has been turned off and unplugged. If the fuse blows again you have an equipment failure. Do not use it again and return it to your dealer for repair.

And last but not least be careful not to touch a person being shocked as you, yourself could also be shocked. Once removed from the shock, have someone send for medical help immediately

Always keep the, on the previous page, mentioned information in mind when using electrically powered equipment.

D&R ELECTRONICA B.V. WEESP

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1382 GS WEESP
THE NETHERLANDS

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Fax: +31 (294) 416 987

Website: <http://www.d-r.nl>

E-mail: info@d-r.nl

23 DECLARATION OF CONFORMITY

DECLARATION OF CONFORMITY

Manufacturers Name: D&R Electronica Weesp b.v.

Manufacturers Address: Rijnkade 15B
1382 GS Weesp
The Netherlands

Declares that the product **AIRLAB series**

Conforms to the following product specifications:

EMC:	NEN-EN 55103-1	1995
	NEN-EN 55103-2	1995
	NEN-EN 55013-1	1994

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 89/336/EEC (1989) as amended by the CE Marking Directive 93/68/EEC (1993).

D&R Electronica Weesp b.v.
Rijnkade 15 B
1382 GS WEESP
The Netherlands
President of Engineering

May 8, 2008
Date

Duco de Rijk
Name

Compliance Program Manager
Title

Signature

D & R Electronica Weesp b.v.
Rijkade 15b - 1382 Gs Weesp
Tel.: 0294 - 418014
Fax: 0294 - 416987

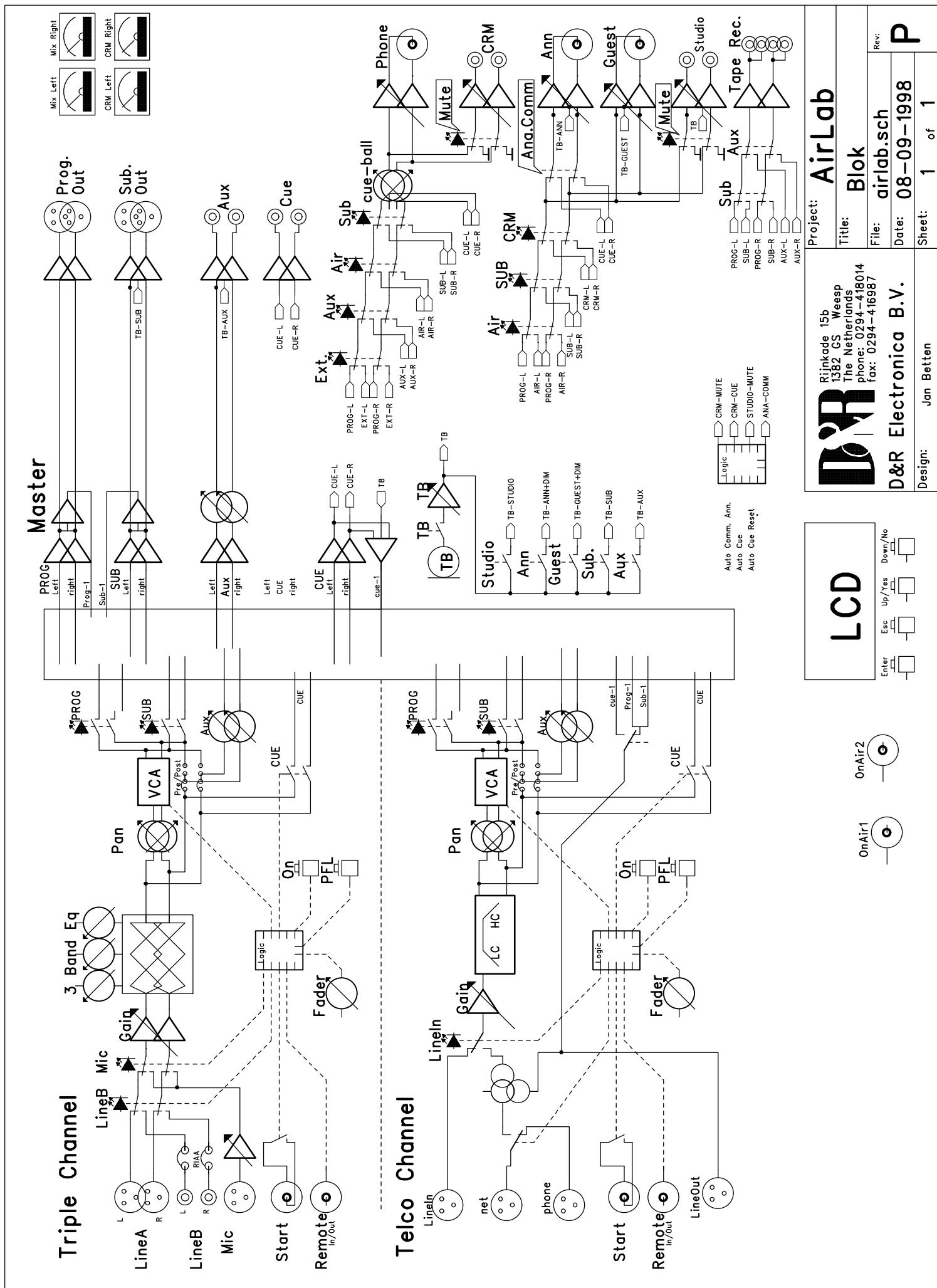


24 DISCLAIMER

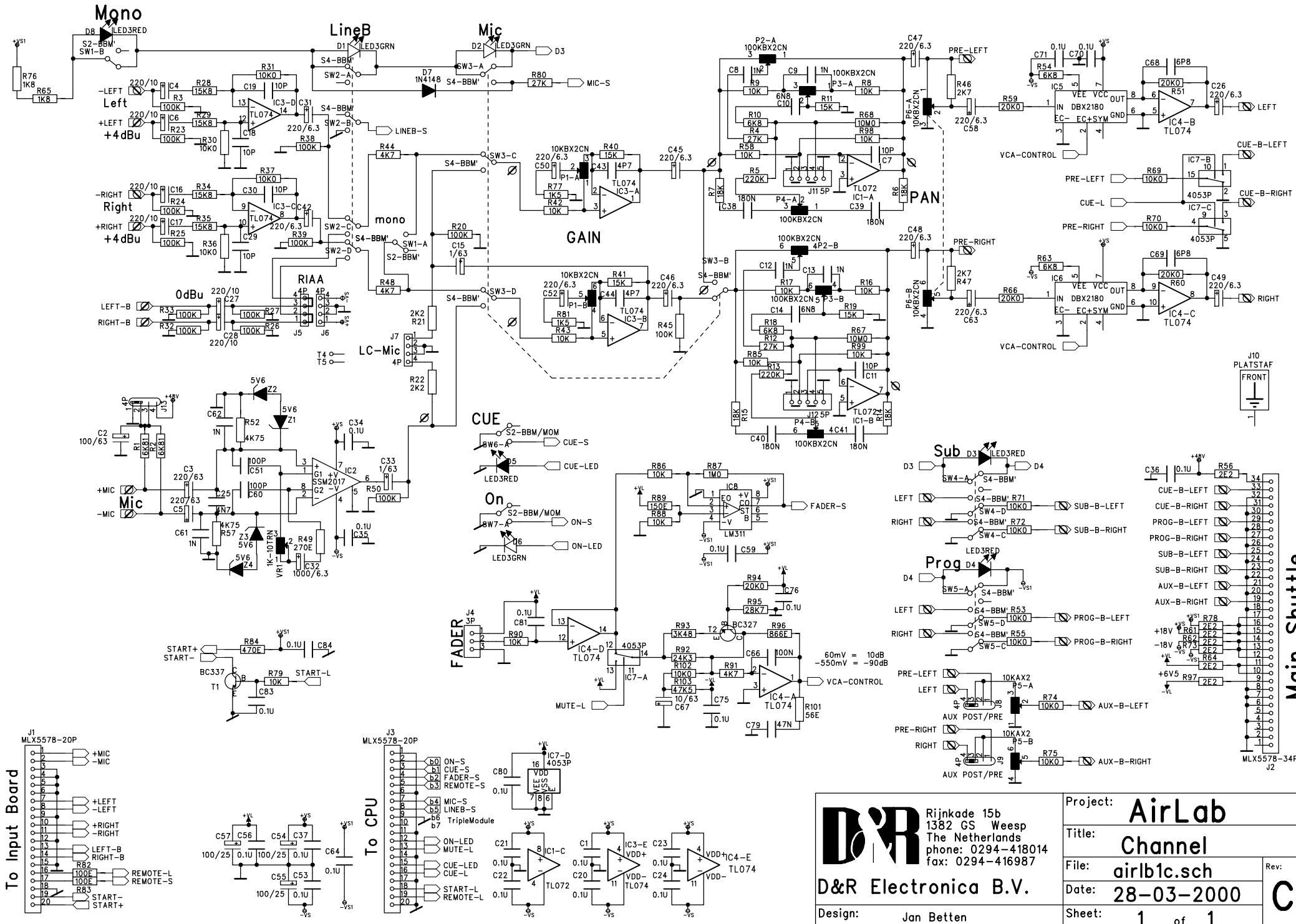
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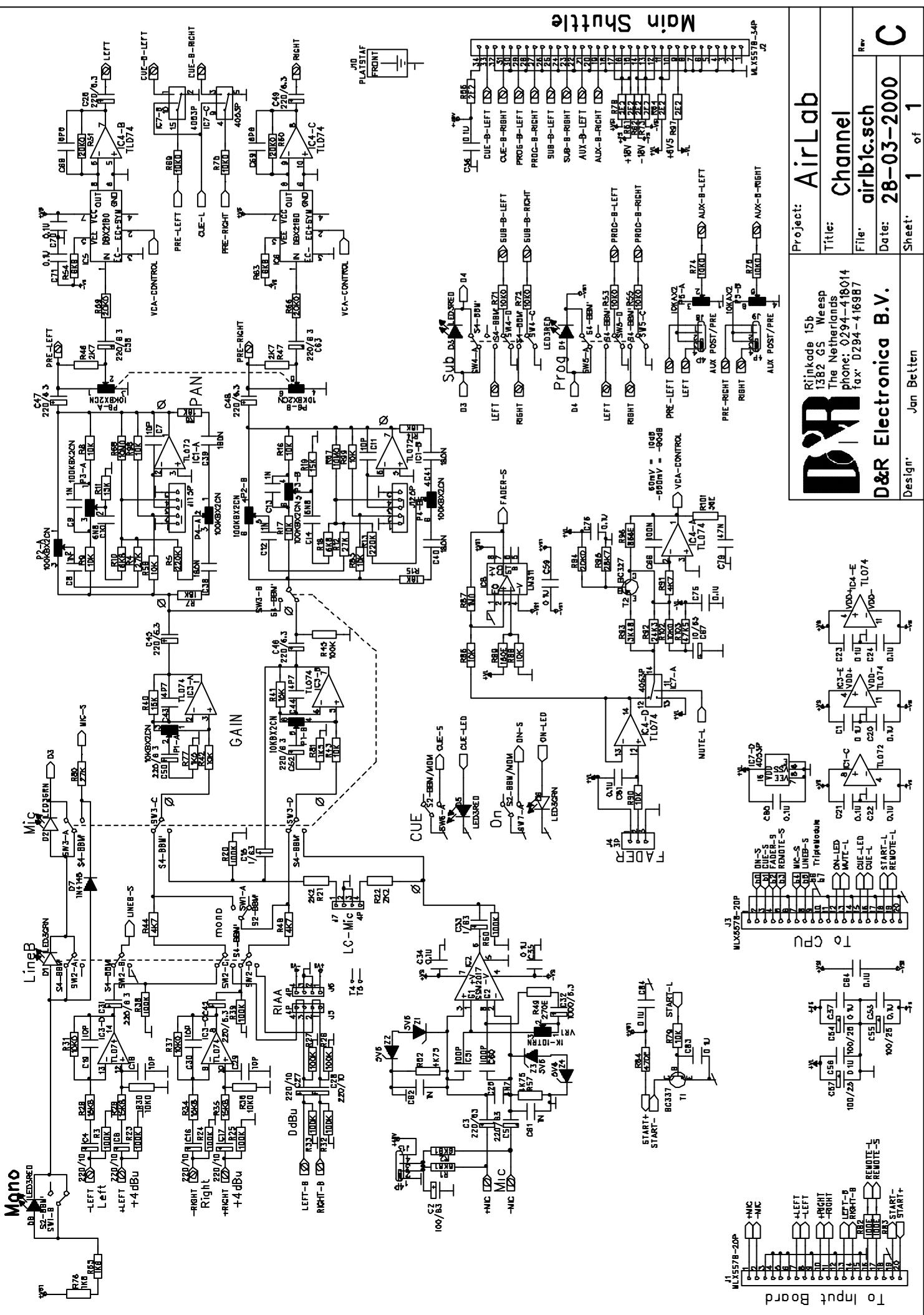
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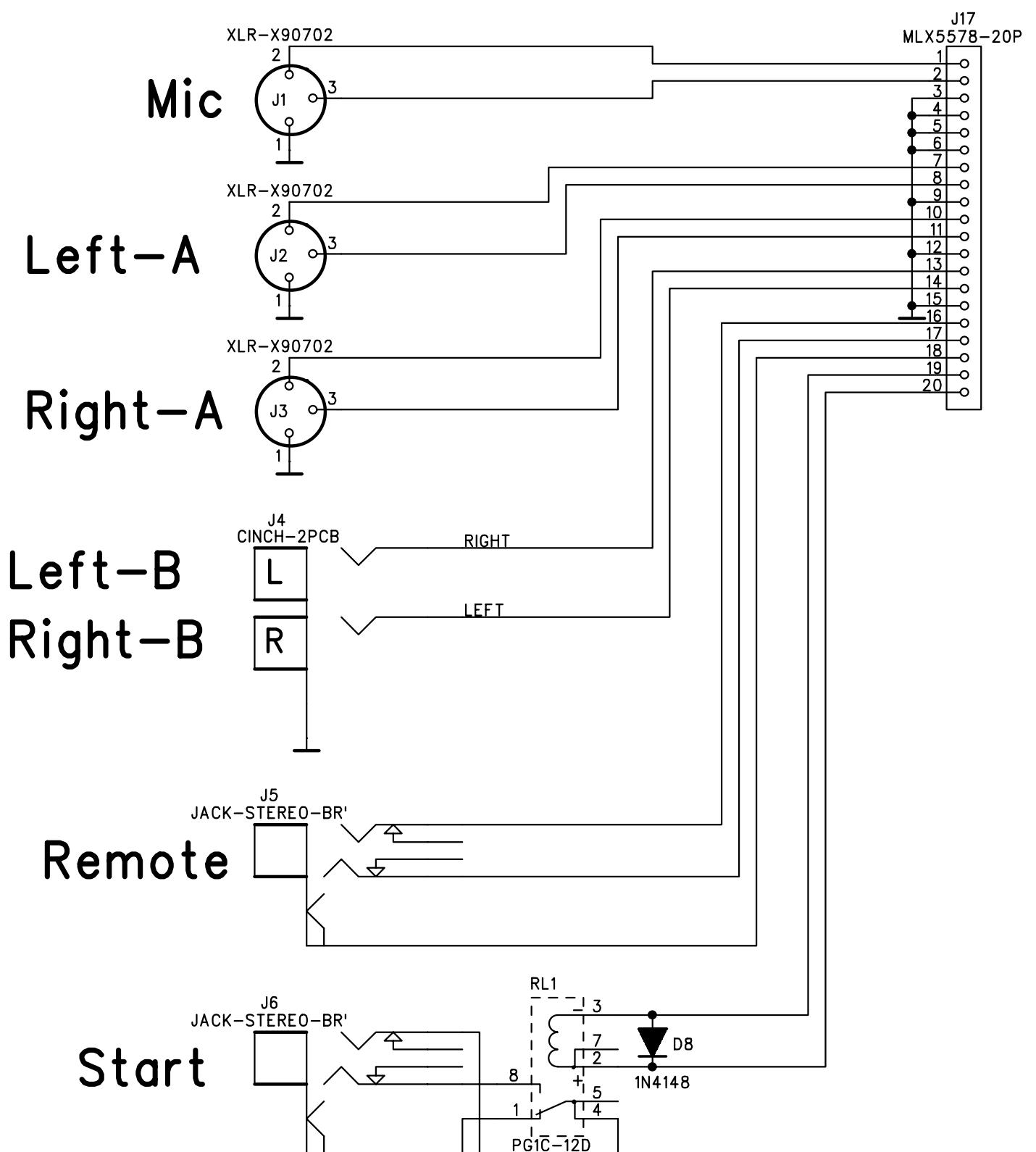
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Main Shuttle







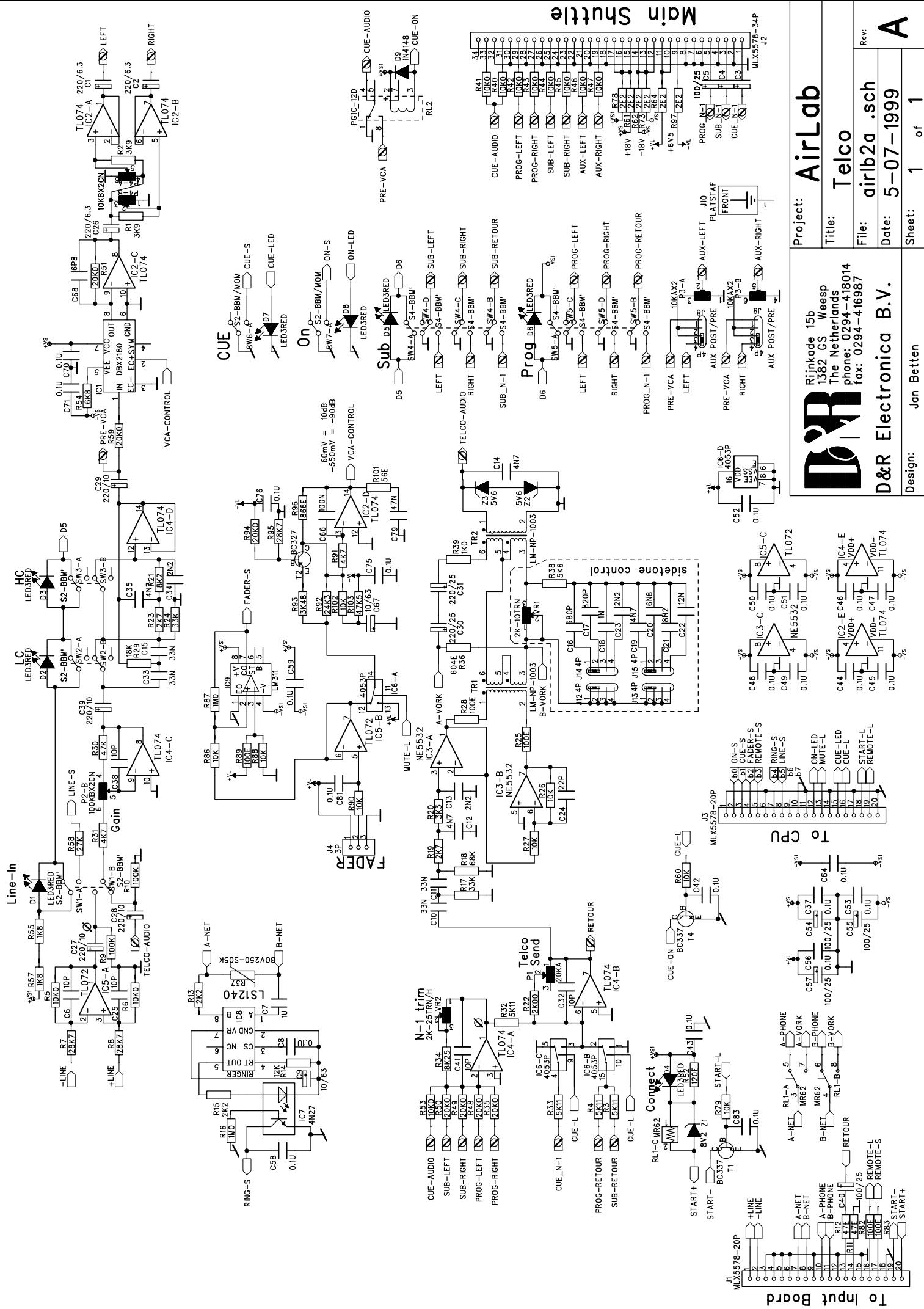
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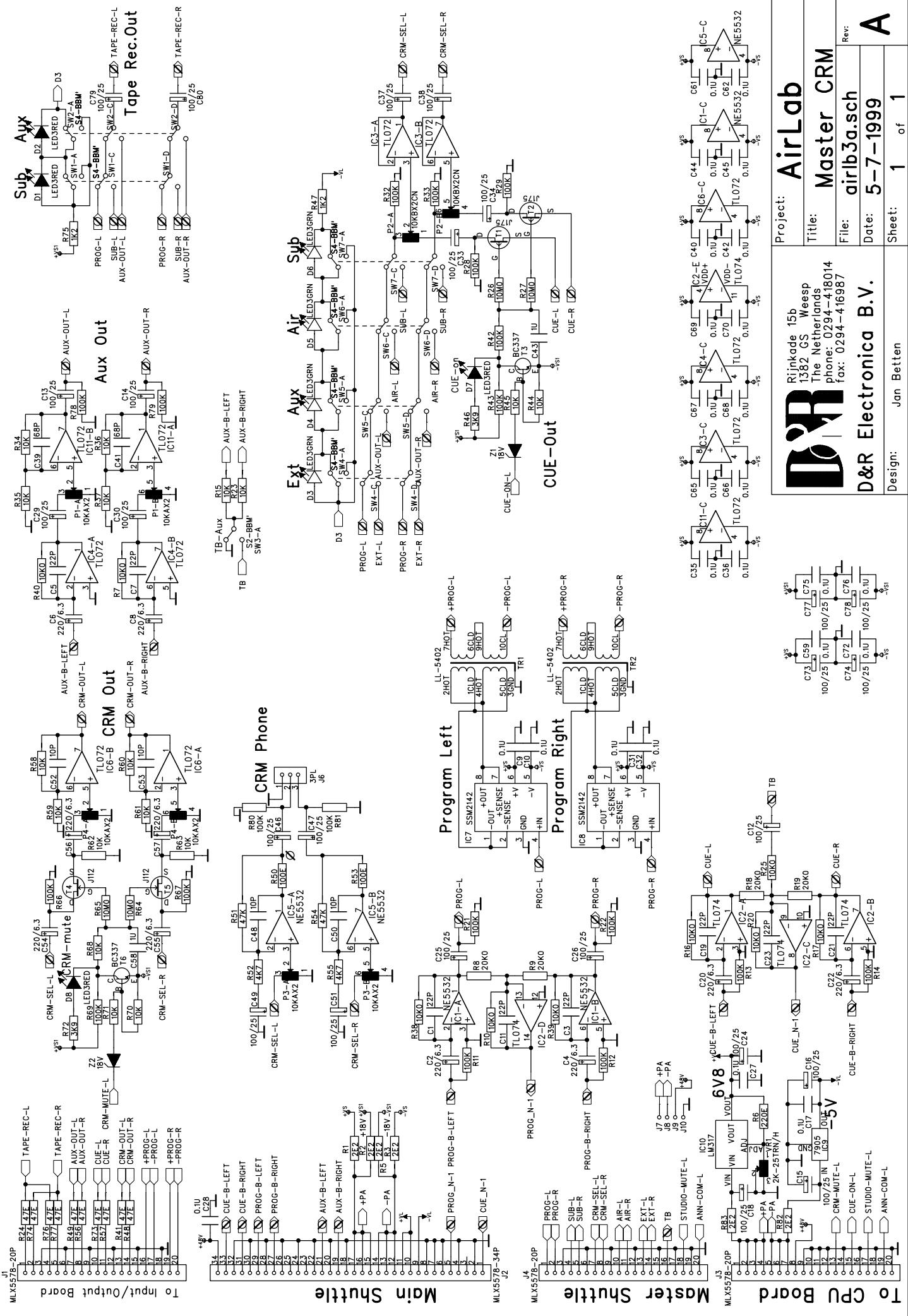
Design: Jan Betten

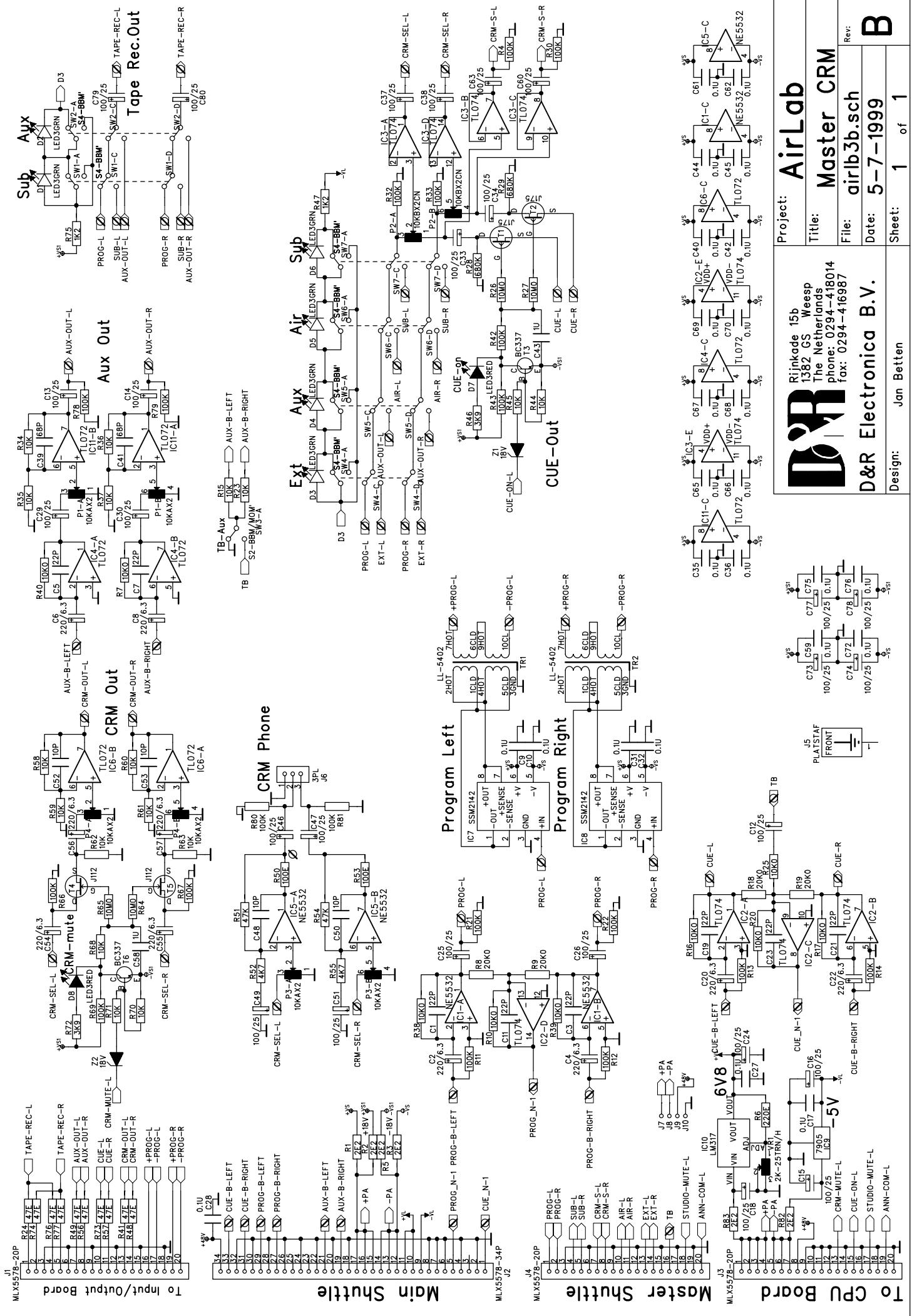
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Title:	Channel I/O
File:	airlb10a.sch
Date:	29-12-1998
Sheet:	1 of 1

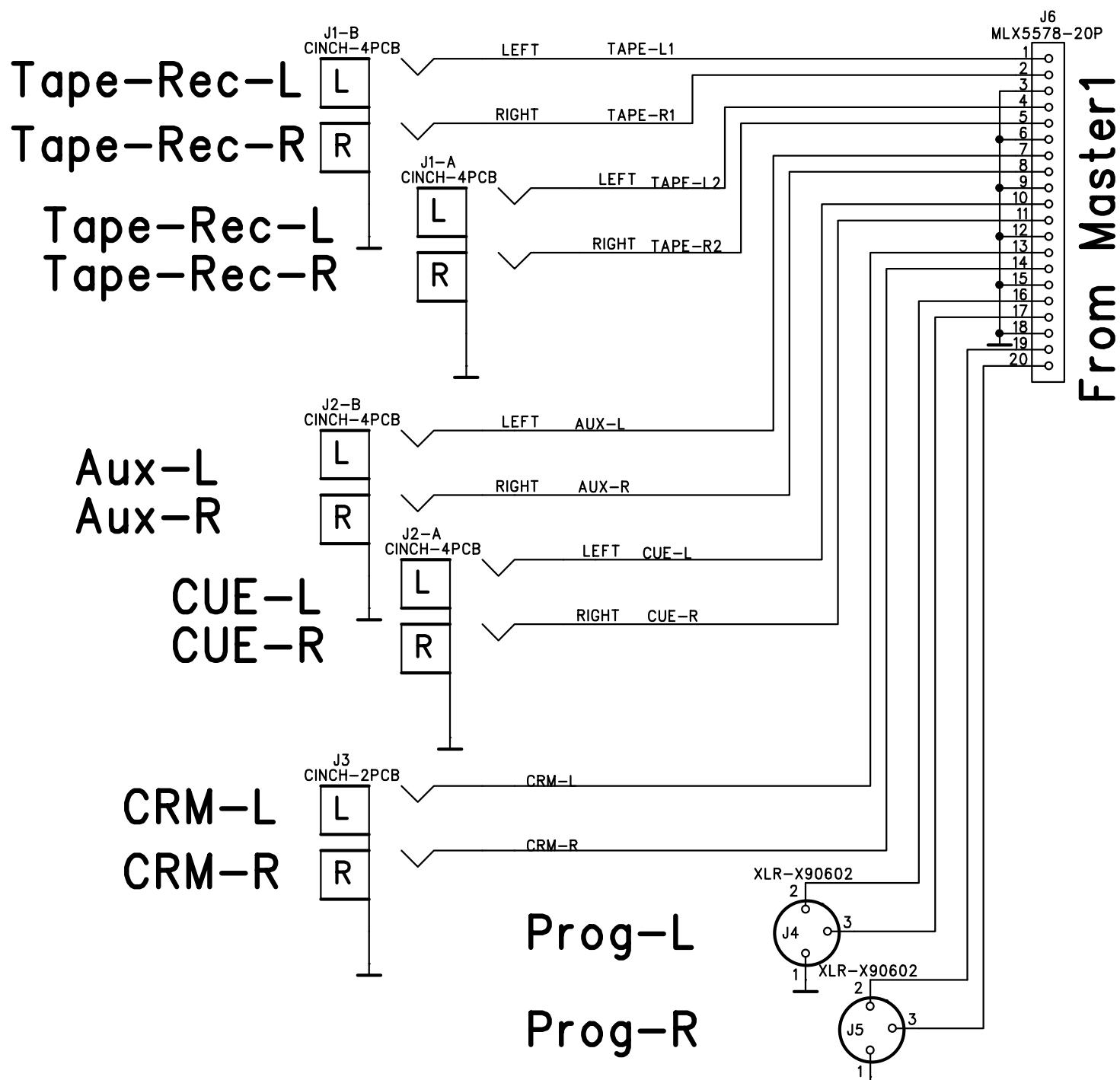
Rev:

P









D&R Electronica B.V.

Rijnkade 15b
1382 GS Weesp
The Netherlands
phone: 0294-418014
fax: 0294-416987

Design: Jan Betten

Project:

AirLab

Title:

Master1 I/O

File:

airlb30a.sch

Rev:

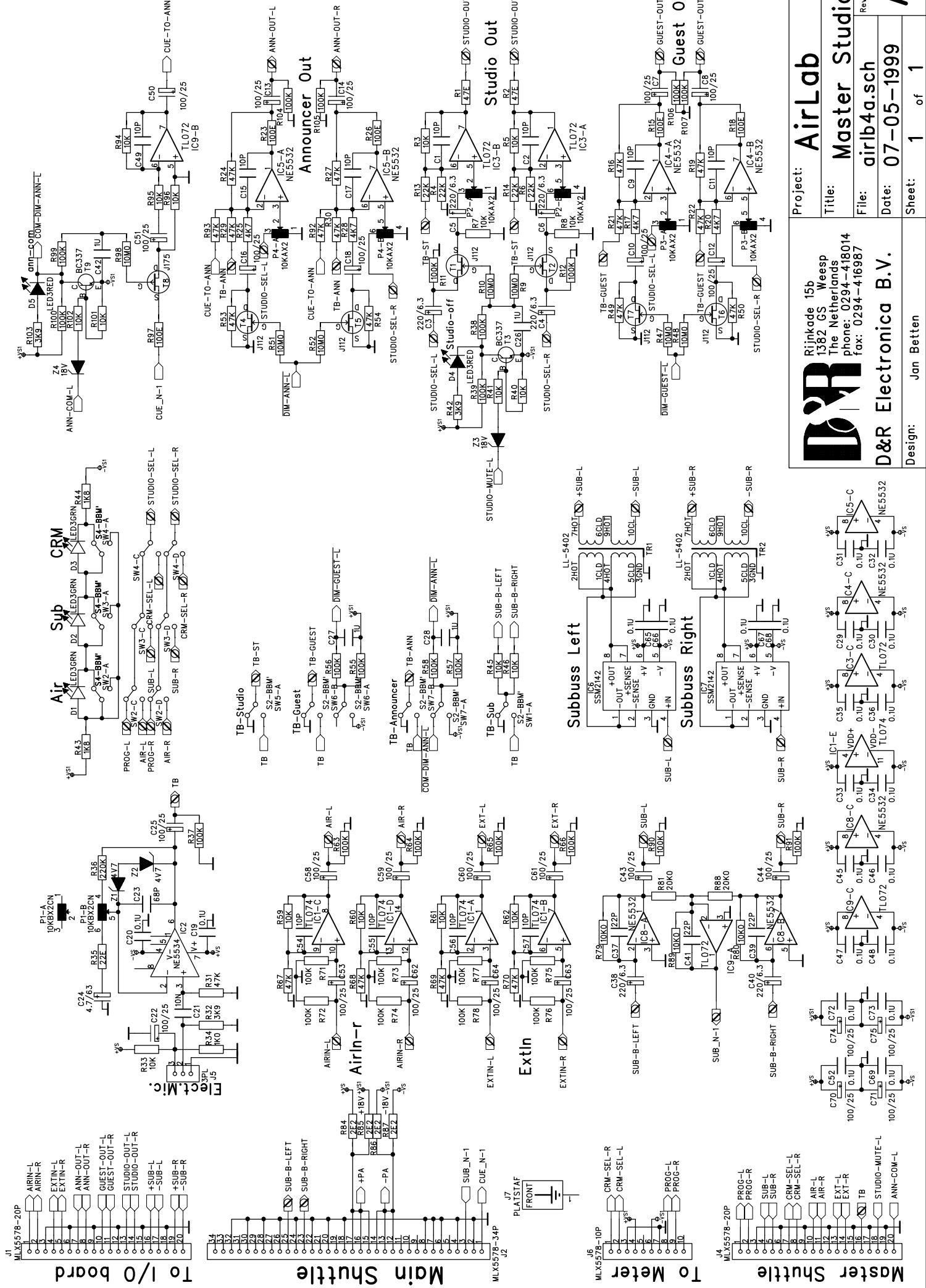
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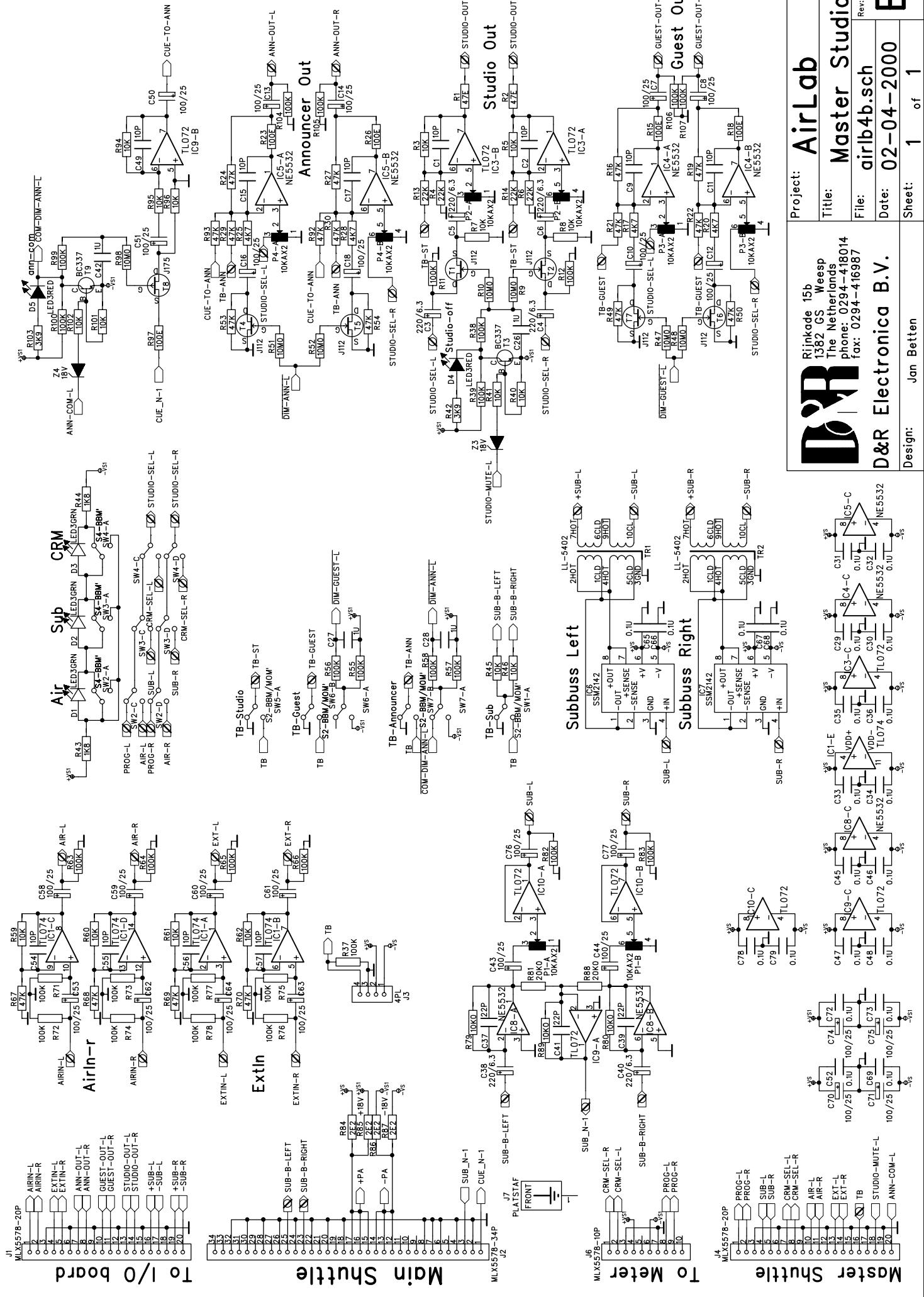
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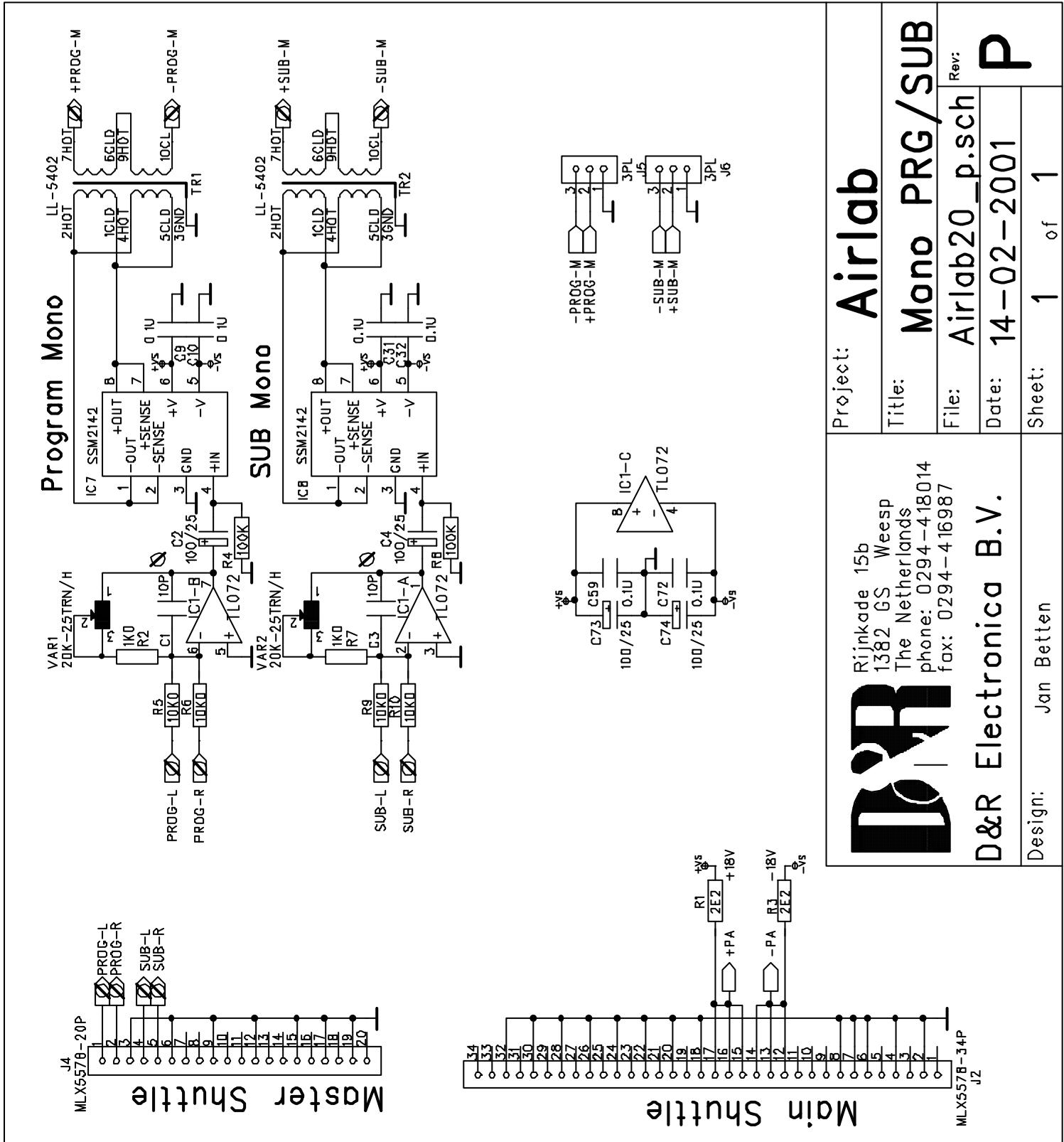
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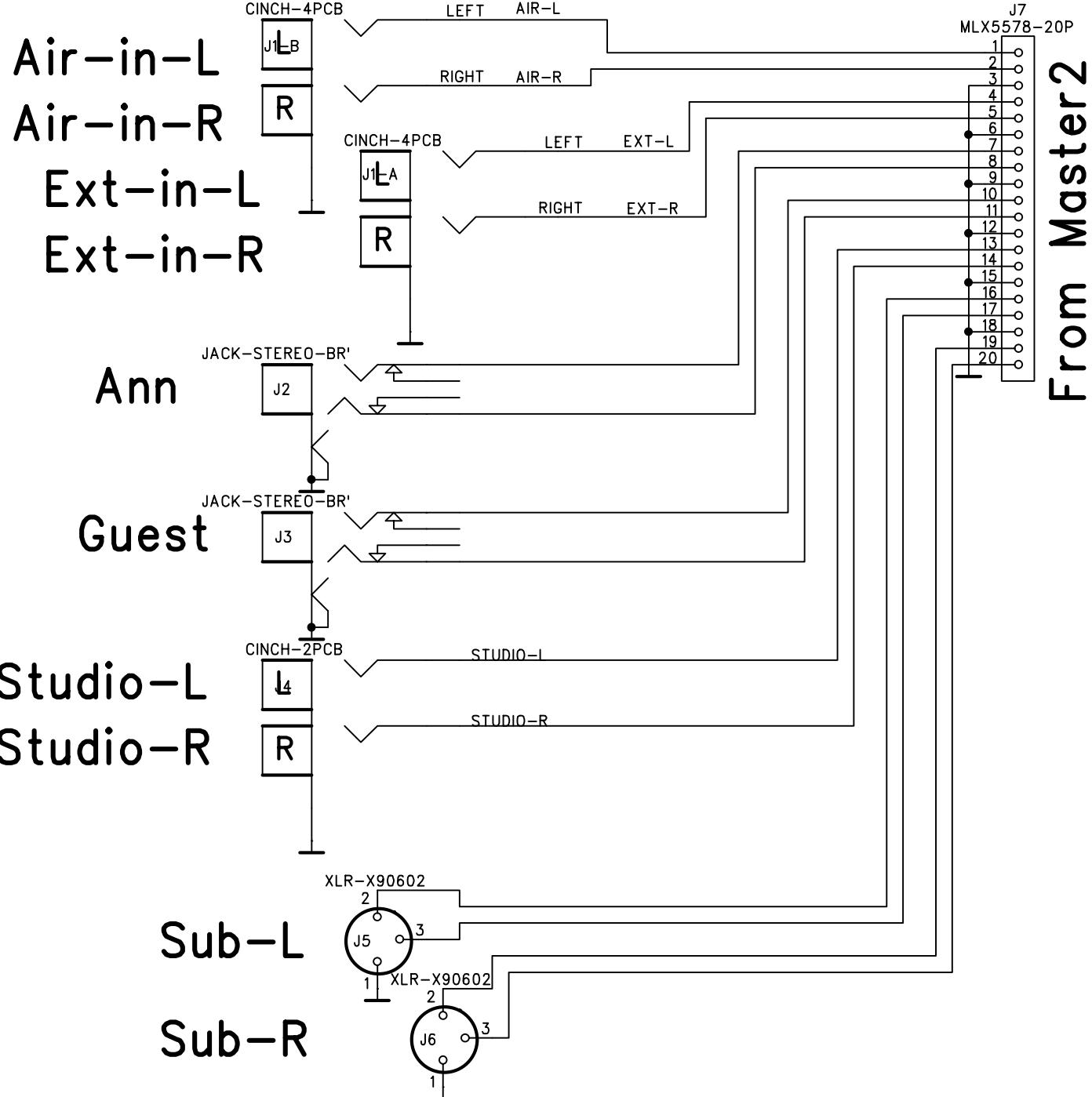
1 of 1

A









Rijnkade 15b
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The Netherlands
phone: 0294-418014
fax: 0294-416987

D&R Electronica B.V.

Design: Jan Betten

Project:

Airlab

Title:

Master2 I/O

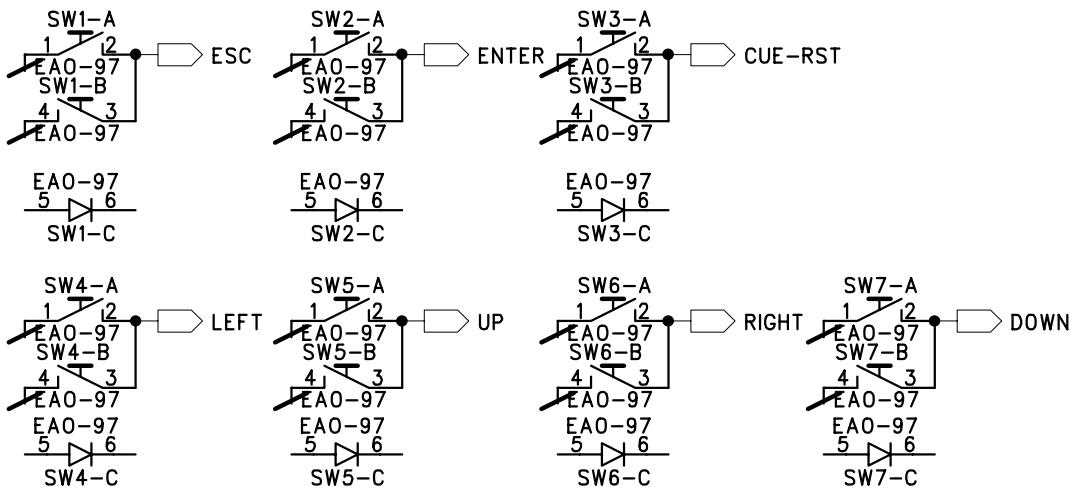
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Rev:

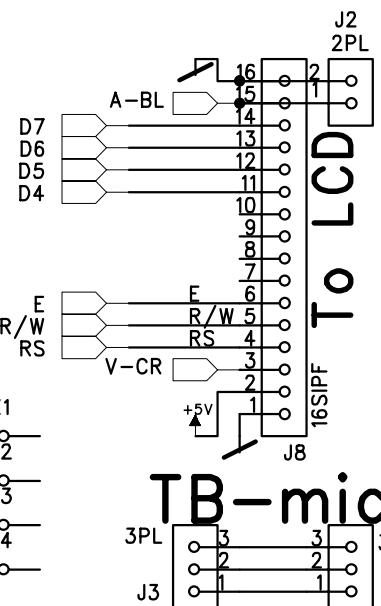
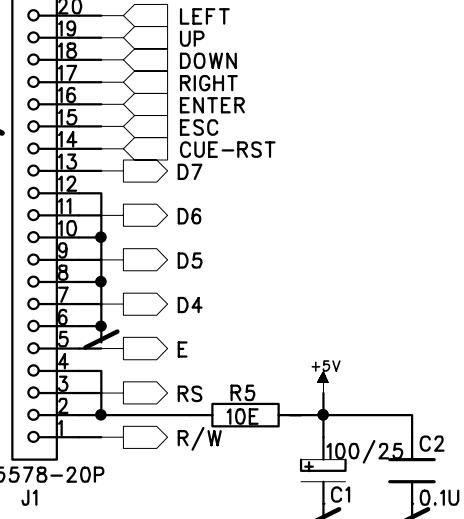
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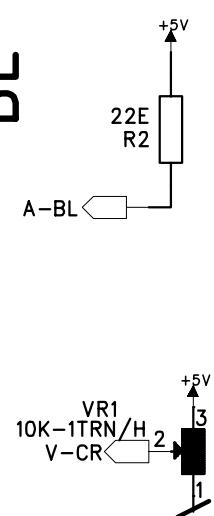
A



From CPU I/O board



BL



Contrast BackLight



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D&R Electronica B.V.

Design: Jan Betten

Project:

AirLab

Title:

Display Sw

File: airlb5a.sch

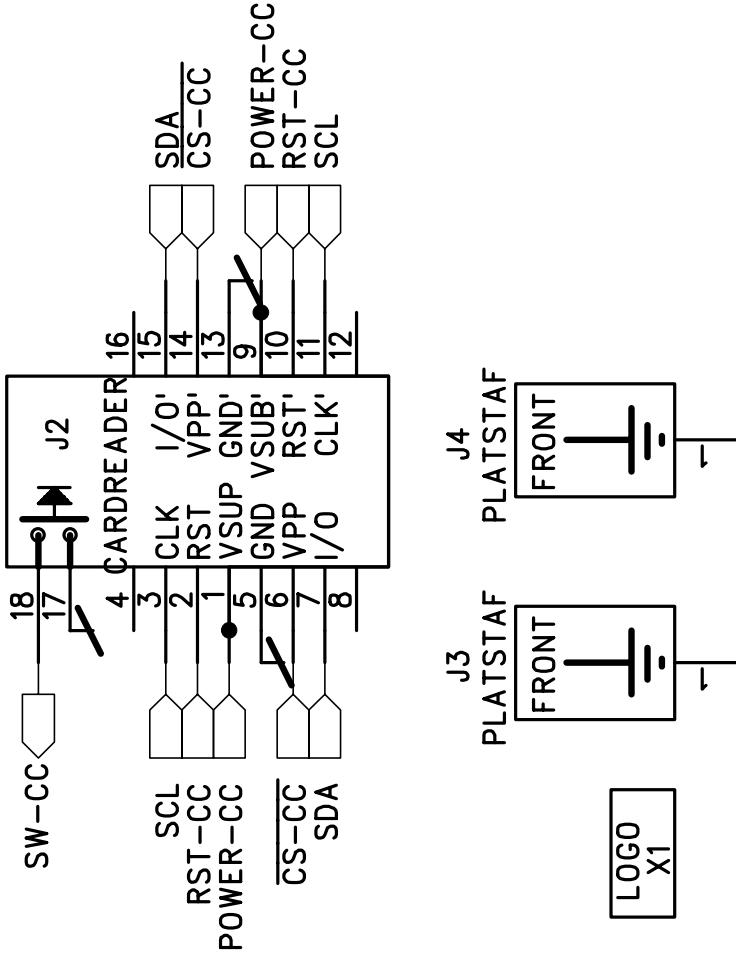
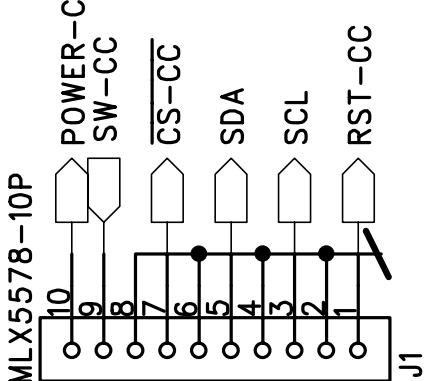
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Rev:

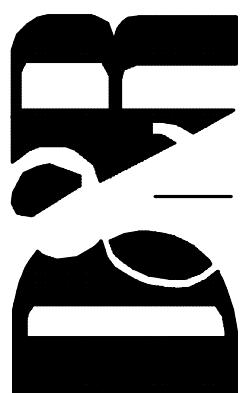
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Sheet: 1 of 1

From CPU I/O Board



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Date:	25-01-1999	
Sheet:	1 of 1	

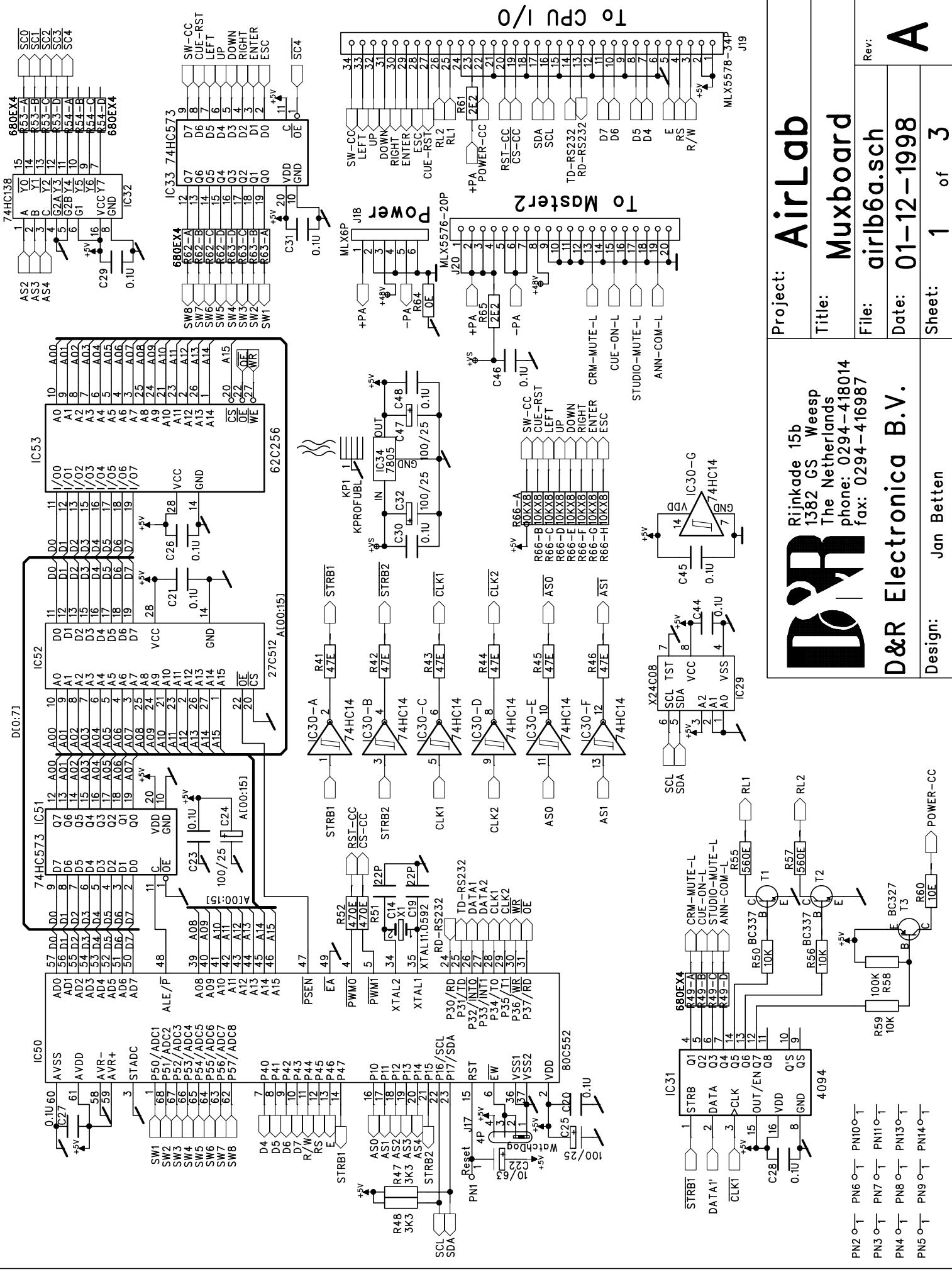


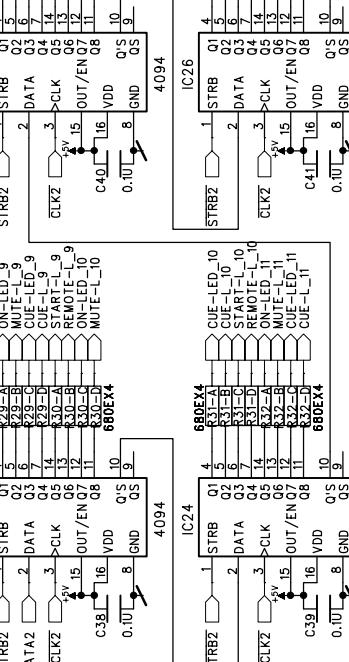
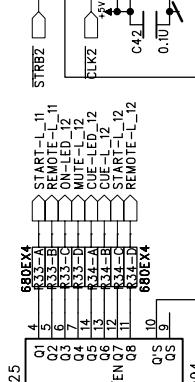
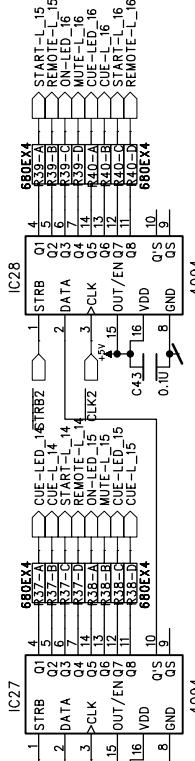
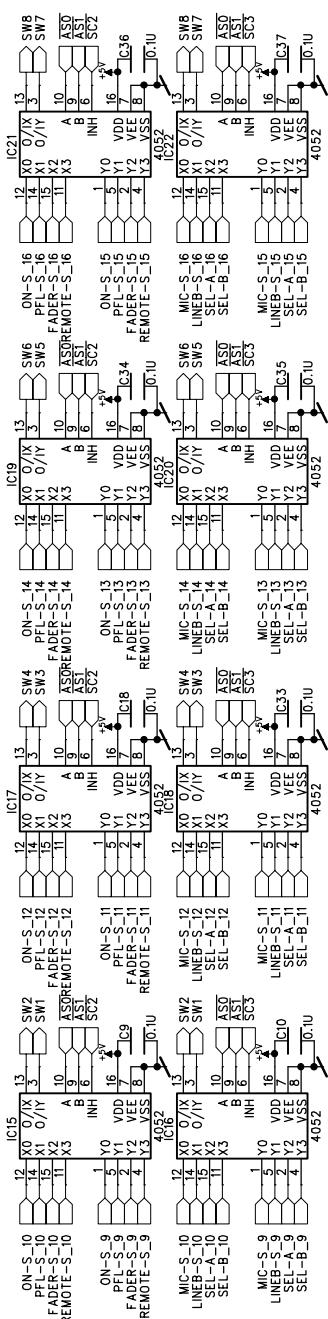
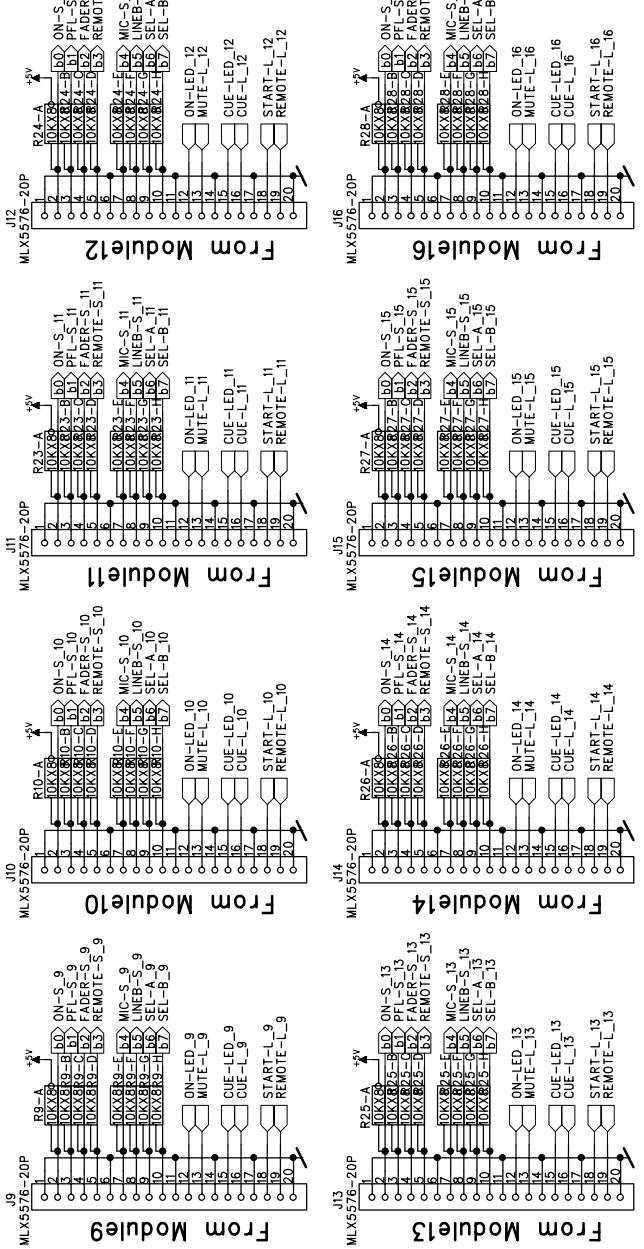
Rijnkade 15b
1382 GS Weesp
The Netherlands
phone: 0294-418014
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D&R Electronica B.V.

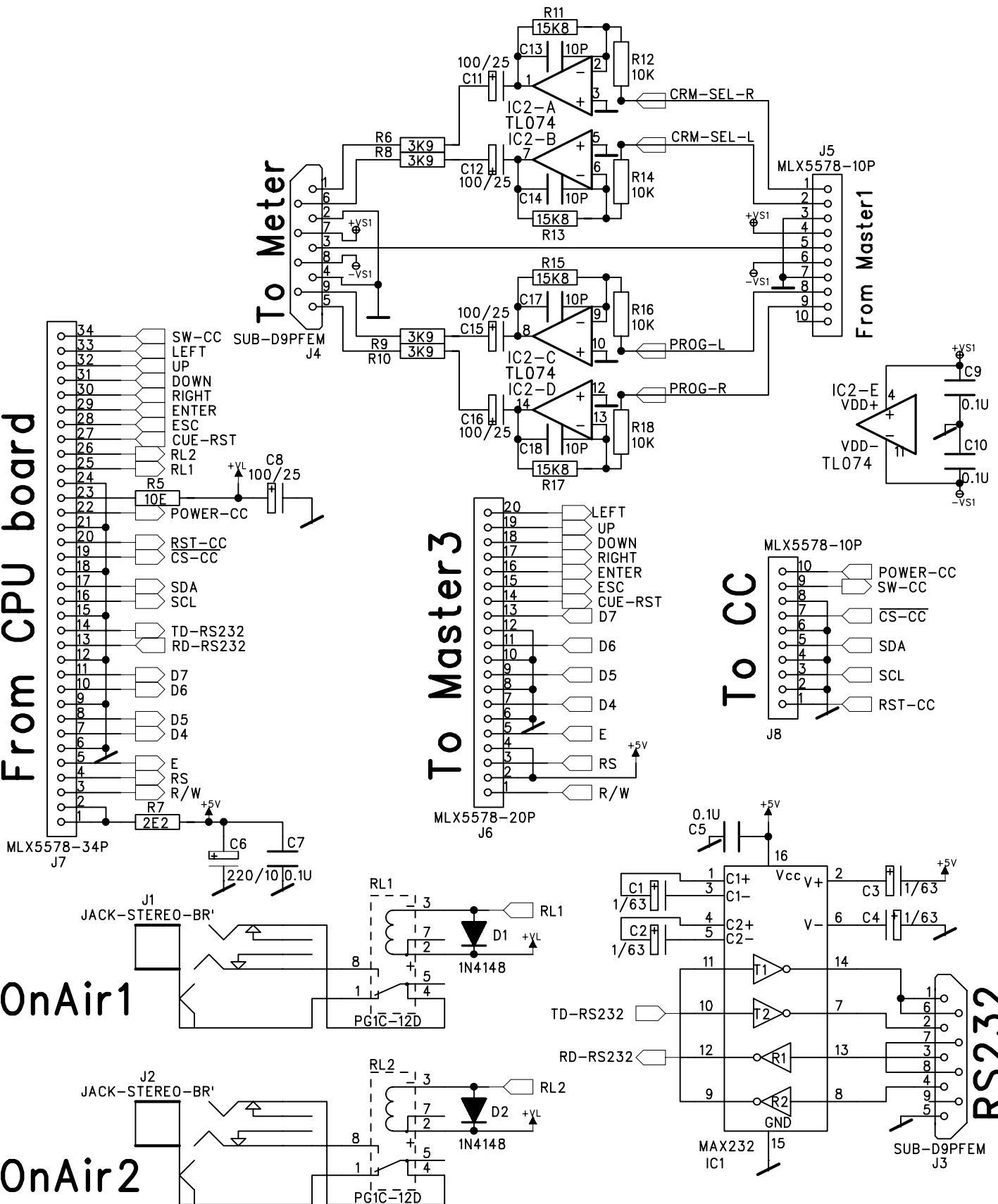
Design: Jan Bettens

A





From CPU board



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fax: 0294-416987
D&R Electronica B.V.

Design: Jan Betten

Project:

AirLab

Title:

CPU I/O

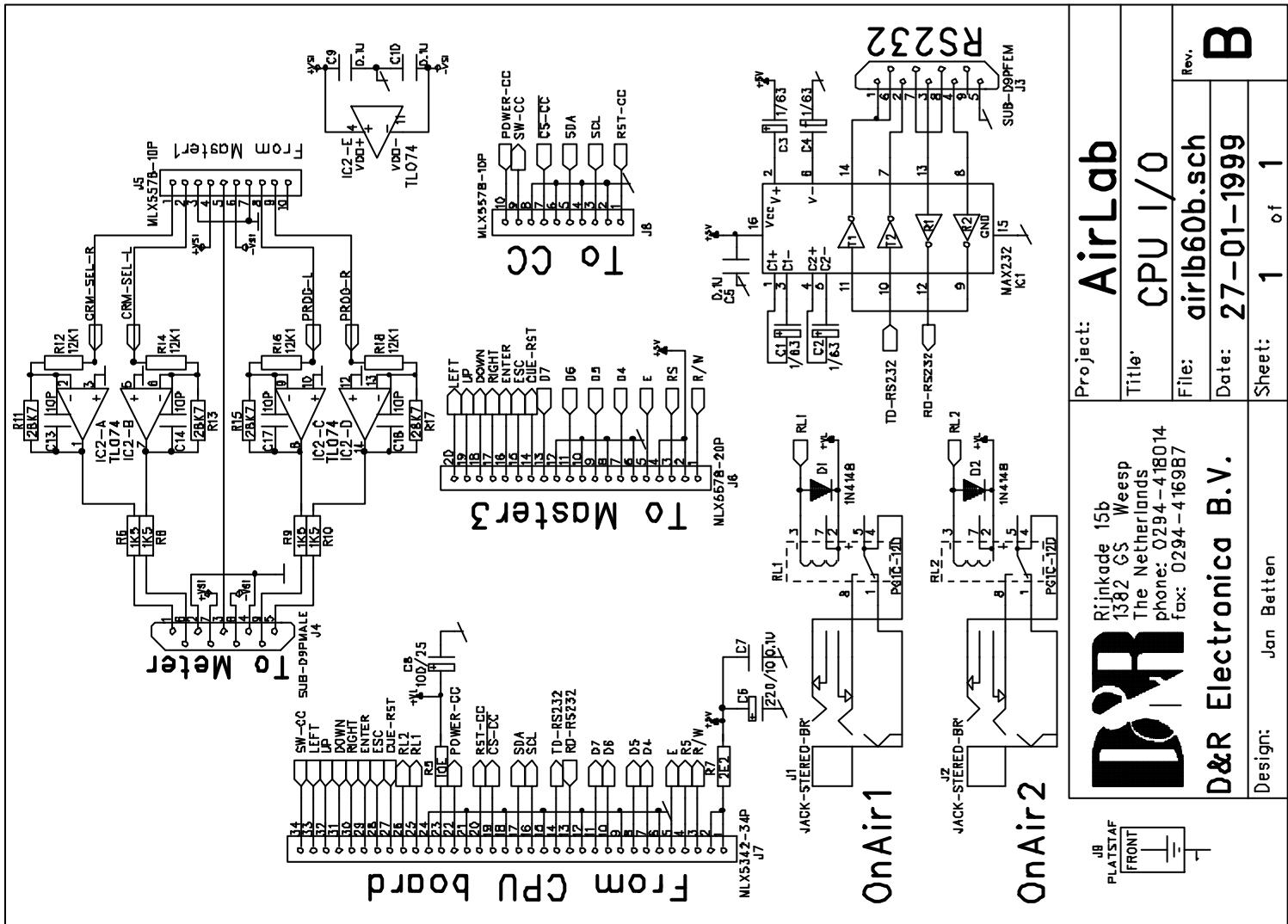
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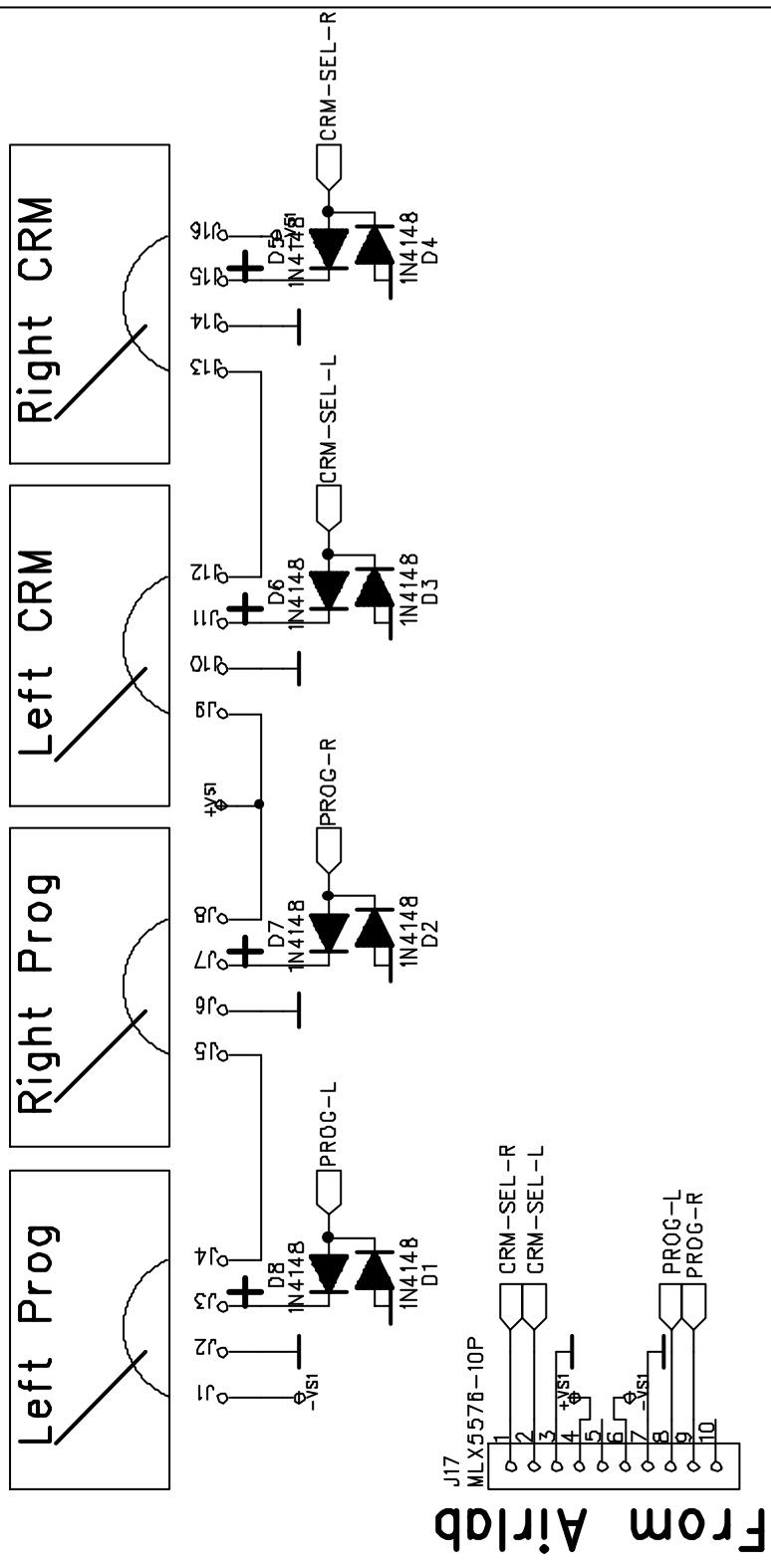
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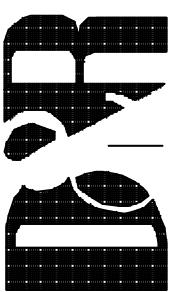
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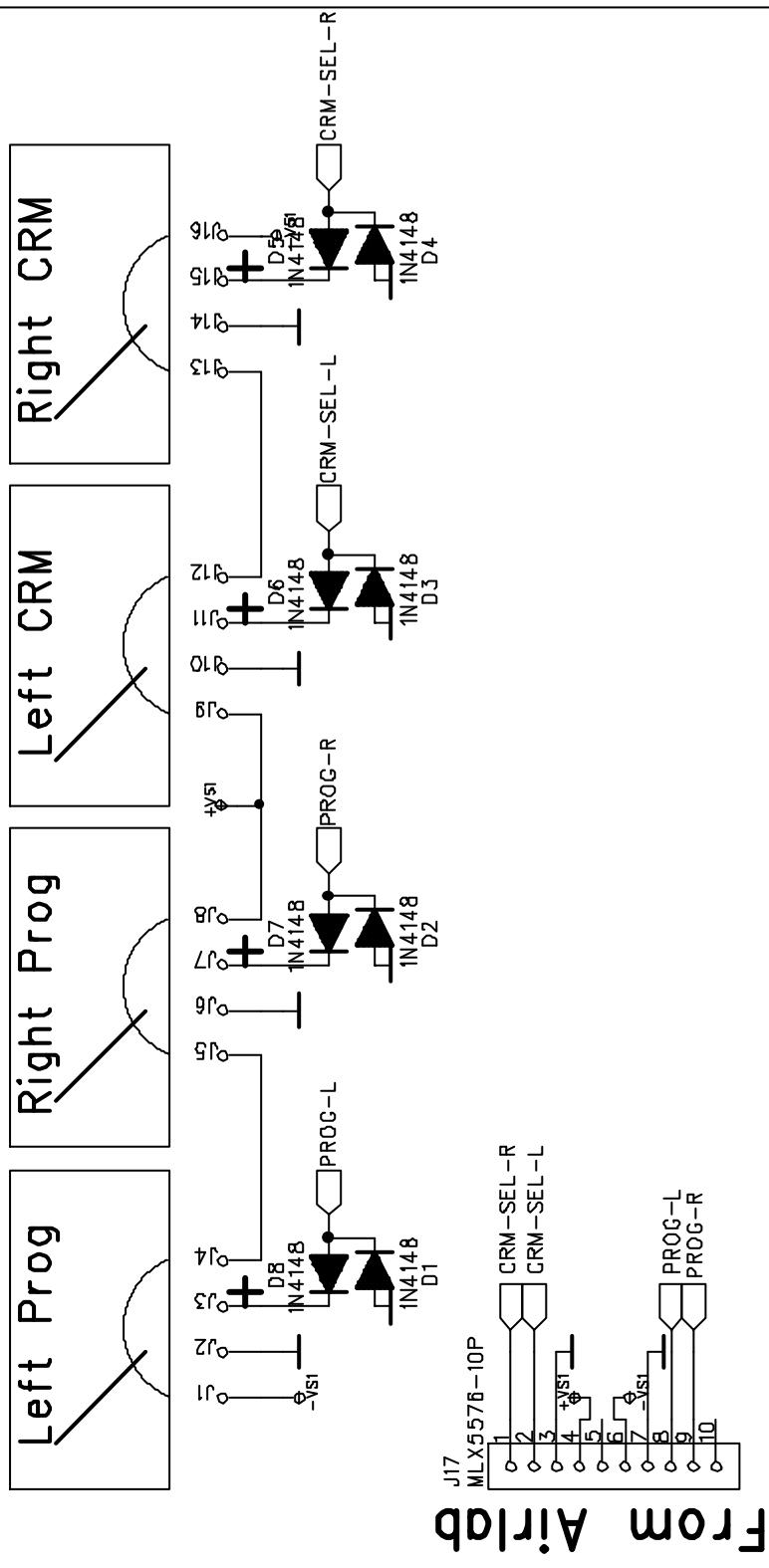
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Sheet: **1 of 1**

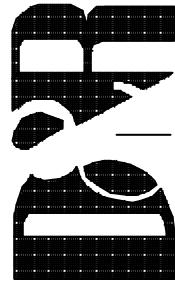




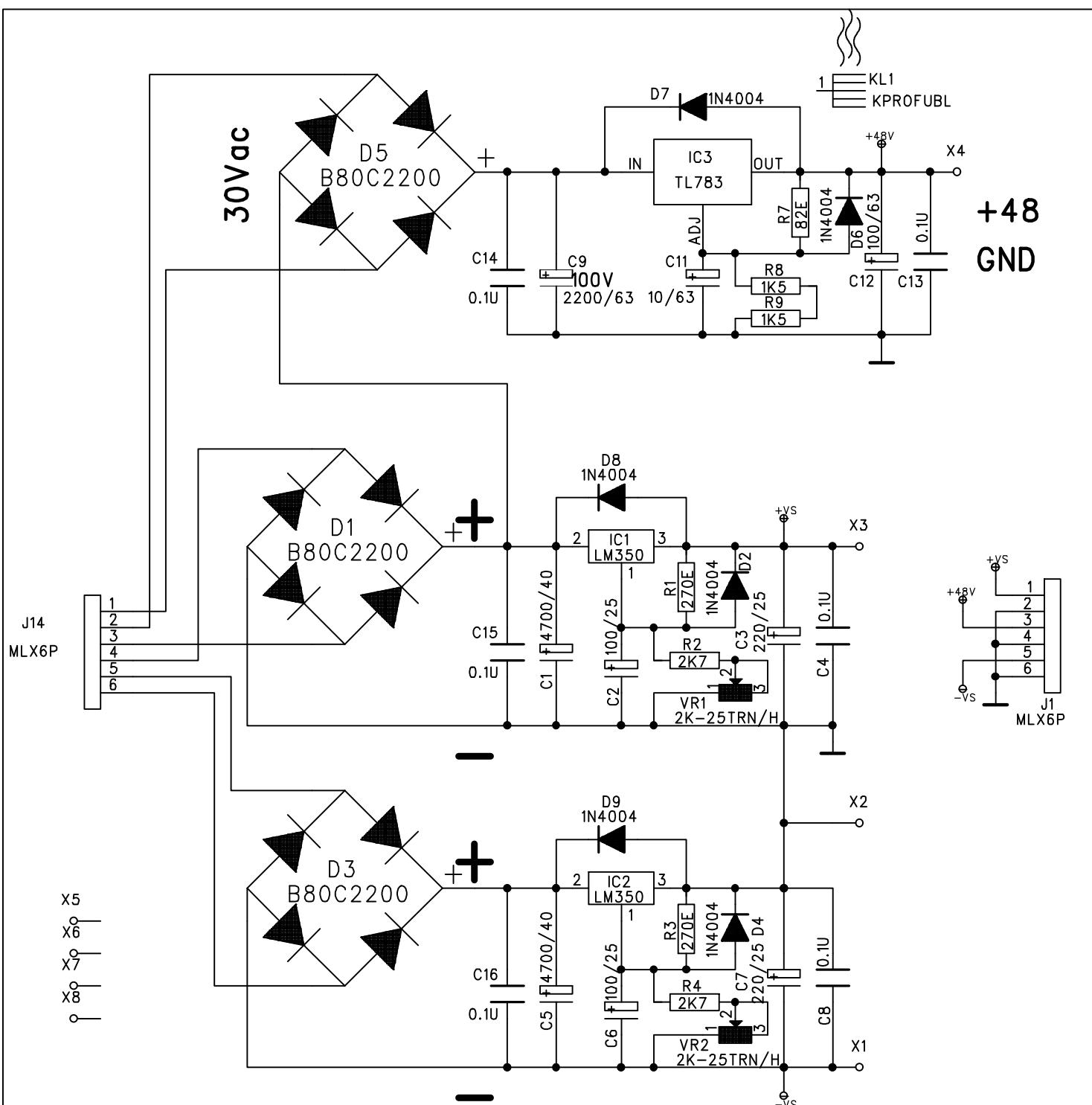
 <p>D&R Rijnkade 15b 1382 GS Weesp The Netherlands phone: 0294-418014 fax: 0294-416987</p> <p>D&R Electronica B.V.</p>		<p>Project: Airlab</p> <p>Title: MeterCon.</p> <p>Date: 10-09-1999</p> <p>Design: Jan Batten</p>
		<p>File: airlb8p.sch</p> <p>Rev: P</p>
<p>Sheet: 1 of 1</p>		



From Airlab

 <p>D&R Rijnkade 15b 1382 GS Weesp The Netherlands phone: 0294-418014 fax: 0294-416987</p>	
<p>Project: Airlab</p>	
<p>Title: MeterCon.</p>	
<p>Date: 10-09-1999</p>	
<p>Design: Jan Batten</p>	<p>Sheet: 1 of 1</p>
<p>P</p>	

Rev



Rijnkade 15b
1382 GS Weesp
The Netherlands
phone: 0294-418014
fax: 0294-416987

D&R Electronica B.V.

Design: Jan Betten

Date: 20-08-99 [15:46] B I L L O F M A T E R I A L

Page:

D & R Electronica Weesp BV SERVICE-MANUAL

60881701 Airlab channel

Articlecode	Description	Quantity	U1
.10600536	Cinch 2xPCB (gold plated bush)	1.0000	st
.10400209	Condensator ker 4p7 R2.5	2.0000	st
.10400211	Condensator ker 6p8 R2.5	2.0000	st
.10400213	Condensator ker 10p R2.5	6.0000	st
.10400225	Condensator ker 100p R2.5	2.0000	st
.10401241	Condensator ker 100nF/50V R5 T	21.0000	st
.10401246	Condensator poly ln0 R5.0	6.0000	st
.10401250	Condensator poly 4n7 R5.0	1.0000	st
.10401251	Condensator poly 6n8 R5.0	2.0000	st
.10401258	Condensator poly 47n R5.0	1.0000	st
.10401261	Condensator poly loon R5.0	1.0000	st
.10401263	Condensator poly 180n R5.0	4.0000	st
.10250342	Diode IN4148 (signaal)	2.0000	st
.10400279	Elco 1uF 63V radiaal R5.0	2.0000	st
.10400284	Elco 10uF 50V radiaal R5.0	1.0000	st
.10400292	Elco 100uF 25V radiaal R5.0	3.0000	st
.10400302	Elco 100uF 63V radiaal R5.0	1.0000	st
.10400243	Elco 220uF 16V radiaal R5.0	18.0000	st
.10400293	Elco 220uF 63V radiaal R5.0	2.0000	st
.10400303	Elco 1000uF 10V radiaal R5.0	1.0000	st
.10250270	Fet BST76a /BS107 (Nch switch)	1.0000	st
.10600511	Header 3p 2.54 lock recht	1.0000	st
.10600478	Header 4p 2.54 recht	4.0000	st
.10600170	Header 4p fem recht pcb	1.0000	st
.10600456	Header 20p 2.54 haaks,	3.0000	st
.10600140	Header 34p 2.54 haaks	1.0000	st
.10250004	Ic 4053B (HCF4053 BEY)switch	1.0000	st
.10250184	Ic SSM-2017 P (audio pre-amp)	1.0000	st
.10250032	Ic THAT 2180-LBE VCA	2.0000	st
.10250304	Ic TL-072 CP TI (dual-opamp)	1.0000	st
.10250305	Ic TL-074 CN TI (quad-opamp)	2.0000	st
.10600394	Ic-voet 8 pins (vork-contact)	2.0000	st
.10600402	Ic-voet 8 pins SIL 2.54mm,	2.0000	st
.10600395	Ic-voet 14 pins (vork-contact)	2.0000	st
.10600396	Ic-voet 16 pins (vork-contact)	1.0000	st
.10300163	Instelpot 10-turn 1k (T18)	1.0000	st
.10600530	Jack chassis. slimline S253-84	2.0000	st
.10300408	Potm.97 10OKBx2 CC	3.0000	st
.10300400	Potm.97 10KAx2	1.0000	st
.10300403	Potm.97 10KBx2 CC	2.0000	st
.10201418	Print Airlab 10A (channel 1/0)	1.0000	st
.10201411	Print Airlab 1A (channel)	1.0000	st
.10550001	Relais DIC121000 lxchnge minid	1.0000	st
.10550395	Schakelaar Alps 2p-ns (moment)	2.0000	st
.10550414	Schakelaar Alps 2pole mini NS	1.0000	st
.10550415	Schakelaar Alps 4pole mini NS	4.0000	st
.10250333	Transistor BC-327/25 (pnp)	1.0000	st
.10250332	Transistor BC-337/25 tape(npn)	1.0000	st
.10350517	Weerstand OE 5% 1/4W	2.0000	st
.10350729	Weerstand 1k0 5% 1/4W	2.0000	st
.10350732	Weerstand 1k8 5% 1/4W	2.0000	st
.10350703	Weerstand 2E2 5% 1/4W	7.0000	st
.10350733	Weerstand 2k2 5% 1/4W	2.0000	st
.10350734	Weerstand 2k7 5% 1/4W	2.0000	st
.10350784	Weerstand 3k48 1% 1/4W	1.0000	st
.10350737	Weerstand 4k7 5% 1/4W	1.0000	st
.10350844	Weerstand 4k75 1% 1/4W	2.0000	st
.10350846	Weerstand 6K81 1% 1/4W	2.0000	st
.10350739	Weerstand 6k8 5% 1/4W	4.0000	st

Articlecode	Description	Quantity	Ur
60881701	Airlab		
	channel		
.10350776	Weerstand 10MO 5% 1/4W	2.0000	st
.10350741	Weerstand 10k 5% 1/4W	11.0000	st
.10350848	Weerstand 10k0 1% 1/4W	13.0000	st
.10350743	Weerstand 15k 5% 1/4W	2.0000	st
.10350853	Weerstand 15k8 1% 1/4W	4.0000	st
.10350744	Weerstand 18k 5% 1/4W	4.0000	st
.10350856	Weerstand 20k0 1% 1/4W	4.0000	st
.10350859	Weerstand 24k3 1% 1/4W	1.0000	st
.10350746	Weerstand 27k 5% 1/4W	3.0000	st
.10350861	Weerstand 28k7 1% 1/4W	1.0000	st
.10350714	Weerstand 56E 5% 1/4W	1.0000	st
.10350750	Weerstand 56k 5% 1/4W	1.0000	st
.10350717	Weerstand 100E 5% 1/4W	2.0000	st
.10350753	Weerstand 100K 5% 1/4W	15.0000	st
.10350757	Weerstand 220K 5% 1/4W	2.0000	st
.10350722	Weerstand 270E 5% 1/4W	1.0000	st
.10350725	Weerstand 470E 5% 1/4W	2.0000	st
.10350826	Weerstand 866E 1% 1/4W	1.0000	st
.10600238	XLR 907-02 ch.fem.3p pl.black	3.0000	st
.10250351	Zenerdiode 5V6 / 400mW	5.0000	st
10650448	Bandkabel 20p (R 1.27)	50.0000	cil
10600470	Conn 20p fem bandkabel	4.0000	st
10600173	Conn: 3p wrd:2UO84-018-0387	1.0000	st
10450151	Deksel SiFam limm Hopsack/117	1.0000	st
10450153	Deksel SiFam limm black/5bulk	1.0000	st
10450182	Deksel SiFam 11mm blue bulk	1.0000	st
10450195	Deksel SiFam limm gray bulk	1.0000	st
10450194	Deksel SiFam l1mm green bulk	1.0000	st
10450152	Deksel SiFam limm red/7 bulk	1.0000	st
10300094	Fader ALPS-Klin 100mm 1OKB 9.4	1.0000	st
10101251	Front Airlab lb (InputChan.)	1.0000	st
10450211	Knop Druktoets 2.8 grey-rectan	2.0000	st
10450208	Knop Druktoets 2.8 grey-square	2.0000	st
10450210	Knop Druktoets 2.8 red-square	1.0000	st
10450216	Knop Druktoets black12x12 3.3	1.0000	st
10450215	Knop Druktoets grey 12x12 3.3	1.0000	si
10450082	Knop Fader SiFam white (1.2x8)	1.0000	si
10450103	Knop SiFam grey splined(limm)	6.0000	st
10250386	Led 3mm green SLR-03A210-020	3.0000	si
10250387	Led 3mm red SLR-03A510-020	4.0000	si
10700690	Platstaf 25 x 10 x 10mm	1.0000	st
10700611	Popnagel 3.0 x 6.5 blank	2.0000	si
20851418	Printb Airlab 10 (channel 1/0)	1.0000	si
20851411	Printb Airlabl (channel)	1.0000	st
10700616	Taptite M3x10 bolkoppozidr/zw.	1.0000	st
10700786	Taptite M3x5 verzkop/pozidr/zw	2.0000	st
10700787	Taptite M3x6 bolkoppozidr/zwrt	2.0000	st
10700790	Taptite M3x6 verzkop/pozidr/zw	7.0000	st

Date: 20-08-99 [15:46] BILL OF MATERIAL

A L Page:

D & R Electronica Weesp BV (SERVICE
MANUAL) Comp: 1
60881702 Airlab telco channel

Articlecode	Description	Quantity	Ur
.10600536	Cinch 2xPCB (gold plated bush)	1.0000	st
.10400211	Condensator ker 6p8 R2.5	1.0000	st
.10400213	Condensator ker lop R2.5	5.0000	st
.10400217	Condensator ker 22p R2.5	1.0000	st
.10400234	Condensator ker 680p R2.5	1.0000	st
.10400235	Condensator ker 820p R2.5	1.0000	st
.10401241	Condensator ker 100nF/50V R5 T	23.0000	st
.10401246	Condensator poly lnO R5.0	1.0000	st
.10401268	Condensator poly lf R5.0	1.0000	st
.10401248	Condensator poly 2n2 R5.0	3.0000	st
.10401250	Condensator poly 4n7 R5.0	4.0000	st
.10401251	Condensator poly 6n8 R5.0	1.0000	st
.10400278	Condensator poly 8n2 R5.0	1.0000	st
.10400273	Condensator poly 12n R5.0	1.0000	st
.10401257	Condensator poly 33n R5.0	4.0000	st
.10401258	Condensator poly 47n R5.0	1.0000	st
.10401261	Condensator poly loon R5.0	1.0000	st
.10250342	Diode 1N4148 (signaal)	2.0000	st
.10400284	Elco 10uF 50V radiaal R5.0	2.0000	st
.10400292	Elco 100uF 25V radiaal R5.0	7.0000	st
.10400243	Elco 220uF 16V radiaal R5.0	7.0000	st
.10400290	Elco 220uF 25V radiaal R5.0	2.0000	st
.10250270	Fet BST76a /BS107 (Nch switch)	1.0000	st
.10600511	Header 3p 2.54 lock recht	1.0000	st
.10600478	Header 4p 2.54 recht	6.0000	st
.10600456	Header 20p 2.54 haaks	3.0000	st
.10600140	Header 34p 2.54 haaks	1.0000	st
.10250004	Ic 4053B (HCF4053 BEY)switch	1.0000	st
.10250014	Ic 4N27 (opto-coupler)	1.0000	st
.10250055	Ic LS 1240 (ringer)	1.0000	st
.10250307	Ic NE-5532 AP TI (dual-opamp)	1.0000	st
.10250032	Ic THAT 2180-LBE VCA	1.0000	st
.10250304	Ic TL-072 CP TI (dual-opamp)	1.0000	st
.10250305	Ic TL-074 CN TI (quad-opamp)	2.0000	st
.10600394	Ic-voet 8 pins (vork-contact)	2.0000	st
.10600402	Ic-voet 8 pins SIL 2.54mm	1.0000	st
.10600395	Ic-voet 14 pins (vork-contact)	2.0000	st
.10600396	Ic-voet 16 pins (vork-contact)	1.0000	st
.10300160	Instelpot 10-turn 2k (T18)	1.0000	st
.10300202	Instelpot 25-turn 2k topT93YB	1.0000	st
.10600530	Jack chassis. slimline S253-84	2.0000	st
.10300409	Potm.97 20KA	1.0000	st
.10300408	Potm.97 10OKBx2 CC	1.0000	st
.10300400	Potm.97 10KAx2	1.0000	st
.10300403	Potm.97 10KBx2 CC	1.0000	st
.10201418	Print Airlab 10A (channel 1/0)	1.0000	st
.10201412	Print Airlab 2A (telco)	1.0000	st
.10550001	Relais DIC121000 lxchnge minid	2.0000	st
.10550010	Relais MR62 DIP 12V (2 x om)	1.0000	st
.10550395	Schakelaar Alps 2p-ns (moment)	2.0000	st
.10550414	Schakelaar Alps 2pole mini NS	3.0000	st
.10550415	Schakelaar Alps 4pole mini NS	2.0000	st
.10950018	Trafo LM-NP-1003-B (PTT line)	2.0000	st
.10250333	Transistor BC-327/25 (pnp)	1.0000	si
.10250332	Transistor BC-337/25 tape(npn)	2.0000	st
.10350765	Weerstand 1MO 5% 1/4W	1.0000	st
.10350729	Weerstand lk8 5% 1/4W	1.0000	st
.10350732	Weerstand lk8 5% 1/4W	2.0000	si
.10350703	Weerstand 2E2 5% 1/4W	6.0000	si

**60881702 Airlab
 telco channel**

Articlecode	Description	Quantity	Unj
.10350835	Weerstand 2k0O 1% 1/4W	1.0000	st
.10350733	Weerstand 2k2 5% 1/4W	4.0000	st
.10350734	Weerstand 2k7 5% 1/4W	2.0000	st
.10350735	Weerstand 3k3 5% 1/4W	1.0000	st
.10350736	Weerstand 3k9 5% 1/4W	2.0000	st
.10350737	Weerstand 4k7 5% 1/4W	2.0000	st
.10350843	Weerstand 5k11 1% 1/4W	4.0000	st
.10350738	Weerstand 5k6 5% 1/4W	1.0000	st
.10350845	Weerstand 5k62 1% 1/4W	1.0000	st
.10350739	Weerstand 6k8 5% 1/4W	1.0000	st
.10350740	Weerstand 8k2 5% 1/4W	1.0000	st
.10350878	Weerstand 9k09 1% 1/4W	1.0000	st
.10350741	Weerstand 10k 5% 1/4W	5.0000	st
.10350848	Weerstand 10k0 1% 1/4W	12.0000	st
.10350850	Weerstand 11k0 1% 1/4W	1.0000	st
.10350742	Weerstand 12k 5% 1/4W	1.0000	st
.10350744	Weerstand 18k 5% 1/4W	1.0000	st
.10350856	Weerstand 20k0 1% 1/4W	9.0000	st
.10350746	Weerstand 27k 5% 1/4W	1.0000	st
.10350747	Weerstand 33k 5% 1/4W	2.0000	st
.10350713	Weerstand 47E 5% 1/4W	2.0000	st
.10350749	Weerstand 47k 5% 1/4W	1.0000	st
.10350714	Weerstand 56E 5% 1/4W	1.0000	st
.10350751	Weerstand 68k 5% 1/4W	1.0000	st
.10350752	Weerstand 82k 5% 1/4W	1.0000	st
.10350717	Weerstand 100E 5% 1/4W	5.0000	st
.10350753	Weerstand 100K 5% 1/4W	3.0000	st
.10350792	Weerstand 604E 1% 1/4W	1.0000	st
.10350825	Weerstand 768E 1% 1/4W	1.0000	st
.10600238	XLR 907-02 ch.fem.3p pl.black	3.0000	st
.10250351	Zenerdiode 5V6 400mW	2.0000	st
.10250352	Zenerdiode 8V2 400mW	1.0000	st
10650448	Bandkabel 20p (R 1.27)	50.0000	Cm
10600470	Conn 20p fem bandkabel	4.0000	st
10600173	Conn: 3p wrd:2UO84-018-0387	1.0000	st
10450182	Deksel SiFam 11mm blue bulk	1.0000	st
10450195	Deksel SiFam limm gray bulk	1.0000	st
10450152	Deksel SiFam limm red/7 bulk	2.0000	st
10300094	Fader ALPS-Klin 100mm 10KB 9.4	1.0000	st
10101252	Front Airlab 2b (TelcoChan.)	1.0000	st
10450209	Knop Druktoets 2.8 black-squar	2.0000	st
10450211	Knop Druktoets 2.8 grey-rectan	1.0000	st
10450208	Knop Druktoets 2.8 grey-square	2.0000	st
10450216	Knop Druktoets black12x12 3.3	1.0000	st
10450215	Knop Druktoets grey 12x12 3.3	1.0000	st
10450011	Knop Fader SiFam red (1.2x8)	1.0000	st
10450103	Knop SiFam grey splined(limm)	4.0000	st
10250386	Led 3mm green SLR-03A210-020	3.0000	st
10250387	Led 3mm red SLR-03A510-020	4.0000	st
10700690	Platstaf 25 x 10 x 10mm	1.0000	st
10700611	Popnagel 3.0 x 6.5 blank	2.0000	st
20851418	Printb Airlab 10 (channel 1/0)	1.0000	st
20851412	Printb Airlab2 (telco ch)	1.0000	st
10700616	Taptite M3x10 bolkoppozidr/zw.	1.0000	st
10700786	Taptite M3x5 verzkop/pozidr/zw	2.0000	st
10700787	Taptite M3x6 bolkoppozidr/zwrt	2.0000	st
10700790	Taptite M3x6 verzkop/pozidr/zw	7.0000	st

Date: 20-08-99 (15:47) BILL OF MATERIAL

Page:

D & R Electronica Weesp BV (SERVICE-MANUAL

) Comp: 1

60881775 Airlab frame

Articlecode	Description	Quantity	Un
.10250347	Brugcel B250-C7000/4000 rechth	3.0000	st
.10400217	Condensator ker 22p R2.5	2.0000	st
.10401241	Condensator ker 100nF/50V R5 T	47.0000	st
.10250343	Diode 1N4004 (rectifier)	6.0000	st
.10400284	Elco 10uF 50V radiaal R5.0	2.0000	st
.10400292	Elco 100uF 25V radiaal R5.0	6.0000	st
.10400302	Elco 100uF 63V radiaal R5.0	1.0000	st
.10400290	Elco 220uF 25V radiaal R5.0	2.0000	st
.10400308	Elco 680/100volt axiaal	1.0000	st
.10400299	Elco 4700uF/40V axiaal	2.0000	st
.10600474	Header 3p 3.96 recht	4.0000	st
.10600478	Header 4p 2.54 recht	1.0000	st
.10600486	Header 6p 3.96 Straight (405)	1.0000	st
.10600509	Header 20P 2.54 recht	17.0000	st
.10600140	Header 34p 2.54 haaks!	1.0000	st
.10250057	Ic 4052 !uitsluitend National!	16.0000	st
.10250094	Ic 4094 (8bit serial shiftreg)	13.0000	st
.10250039	Ic 62C256 (8 bit 32k ram)	1.0000	st
.10250048	Ic 74HC138 3to8 line decoder	1.0000	st
.10250035	Ic 74HC14 (hex inv.schmittreg)	1.0000	st
.10250033	Ic 74HC573 (octal-D latch)	2.0000	st
.10250291	Ic 7805 T0220 SGS (volt.reg)	1.0000	st
.10250036	Ic 80C552 (8-bit inicro-comptr)	1.0000	st
.10250026	Ic AM27C512-90DC 64K 100ns	1.0000	st
.10250019	Ic LM-350 T03 (volt.reg)	2.0000	st
.10250020	Ic TL-783 T0220 (high voltreg)	1.0000	st
.10250187	Ic X24164P 2kx8ser.EEprom di18	1.0000	st
.10600394	Ic-voet 8 pins (vork-contact)	1.0000	st
.10600395	Ic-voet 14 pins (vork-contact)	1.0000	st
.10600396	Ic-voet 16 pins (vork-contact)	30.0000	st
.10600398	Ic-voet 20 pins (vork-contact)	2.0000	st
.10600401	Ic-voet 28 pins (vork-contact)	2.0000	st
.10600403	Ic-voet 68 pins (PLCC Socket)	1.0000	st
.10300202	Instelpot 25-turn 2k topT93YB	2.0000	st
.10720664	Koelblok KL-135 75mm TO-3 zwrt	2.0000	st
.10720662	Koelprof KL-169/SW TO-220	1.0000	st
.10720663	Koelprof KL-207/38,1/SW 207180	1.0000	st
.10250398	Kristal 11.0592 Mhz	1.0000	st
.10750005	MDF plaatm 2440x65x10mm	0.3000	st
.10100008	Montageplaat 9.511	2.0000	st
.10700603	Parker 2.9 x 9 zwart	8.0000	st
.10200610	Print Aircom- 9d (powersupply)	1.0000	st
.10201416	Print Airlab 6a (cpu/mux)	1.0000	st
.10700011	Schuimrubberstr 2000x120x12mm	0.4000	st
.10700012	Skai SPARTA Donker grijs 112	0.2000	m
.10250333	Transistor BC-327/25 (pnp)	1.0000	st
.10250332	Transistor BC-337/25 tape(npn)	2.0000	st
.10350517	Weerstand OE 5% 1/4W	1.0000	st
.10350731	Weerstand 1k5 5% 1/4W	2.0000	st
.10350703	Weerstand 2E2 5% 1/4W	2.0000	st
.10350734	Weerstand 2k7 5% 1/4W	2.0000	st
.10350735	Weerstand 3k3 5% 1/4W	2.0000	st
.10350705	Weerstand 10E 5% 1/4W	1.0000	st
.10350741	Weerstand 10k 5% 1/4W	3.0000	st
.10350713	Weerstand 47E 5% 1/4W	6.0000	st
.10350716	Weerstand 82E 5% 1/4W	1.0000	st
.10350753	Weerstand 100K 5% 1/4W	1.0000	st
.10350722	Weerstand 270E 5% 1/4W	2.0000	st
.10350725	Weerstand 470E 5% 1/4W	2.0000	st

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 Airlab
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Articlecode	Description	Quantity	Ur
.10350726	Weerstand 560E 5% 1/4W	2.0000	st
.10350029	Weerstand 680E array si18 ncom	29.0000	st
.10350031	Weerstand array 8x 10k 9p SIL	16.0000	st
10101255	Achterplaat Airlab /b	1.0000	st
10650159	Bandkabel 34p (R 1.27)	300.0000	cil
10700618	Bout M 3 x 25 zwart	12.0000	st
10700908	Bout M 5x40 tapbout blank	1.0000	st
10600132	Conn 34p fem bandkabel	18.0000	st
10600460	Conn 406-6p 3.96	1.0000	st
10600173	Conn: 3p wrd:2UO84-018-0387	1.0000	st
10600169	Conn: 4p wrd: 2UO84-017-0387	1.0000	st
10600471	Crimp cont 406 series tin	12.0000	st
10800005	Doos Airmix-16	1.0000	st
10700975	Dubbelzijdig plakband 12mm dun	154.0000	cil
10500002	Isolatiekous 3.0mm rond (grys)	12.0000	c1n
10600432	Jack chassis break	1.0000	st
10600437	Jack fiberring (zwart)	1.0000	st
10600436	Jack moer	1.0000	st
10600007	Kabelschoen + boutgat M3 rood	1.0000	st
10700625	Kartelring M 3 (buitenvertan)	2.0000	st
10700910	Kartelring M5 (buitenvertand)	1.0000	st
10150427	Kast Airlab/b	1.0000	st
10500683	Krimpkous 3.2>1.6 zwart	10.0000	cr
10700007	Magneetstrip 8.5mm x 3mm.	154.0000	cr
10600701	Mains inlet SKT MS3 + FR MS3	1.0000	st
10700610	Moer M 3	2.0000	st
10700909	Moer M5	1.0000	st
10650374	Montagedraad 0.4 mm2 (geel)	30.0000	cy
10650375	Montagedraad 0.4 mm2 (groen)	30.0000	cl
10650371	Montagedraad 0.4 mm2 (rood)	30.0000	cl
10550020	Netschak. small black no lamp	1.0000	si
10600498	Netsnoer 3 aders euroconnector	1.0000	st
10101256	Plexiglas Airlab	1.0000	st
20850029	Print bestukt Aircom- 9 (ps)	1.0000	st
20851416	Printb Airlab6 (cpu/mux)	1.0000	st
10700707	Ring M5	1.0000	st
10950879	Ringk 120VA 2x19lx30+Mu+kern	1.0000	st
10100682	Schrijfstrook 2800x28x3mm 62st	77.0000	ci
10700702	Schroef spaanplaat 4.5 x 20	6.0000	st
10700700	Schroef spaanplaat 4.5 x 30	2.0000	st
10800958	Schuimblok 40x140x280mm	11.0000	st
10800966	Schuimblok 80x140x280mm	2.0000	st
10700677	Soldeerlip klein	1.0000	st
10700787	Taptite M3x6 bolkoppozidr/zwrt	16.0000	st
10700681	Tywrap kort 94 mm blank	1.0000	st
10700679	Tywrap plakzadel 21 x 21 mm	1.0000	st
10990703	Zekering 500mA slow 5x20mm	1.0000	st
10750758	Zijkant Airlab-A Ral 7042(L+R)	1.0000	s(

Page:

D & R Electronica Weesp BV SERVICE-MANUAL
Comp:

60881705 Airlab master

Articlecode	Description	Quantity	U1
.10600390	ChipCard Conn 523 CCM02-1-NO35	1.0000	st
.10600536	Cinch 2xPCB (gold plated bush)	2.0000	st
.10600535	Cinch 4xPCB (gold plated bush)	3.0000	st
.10400213	Condensator ker lop R2.5	15.0000	st
.104QO217	Condensator ker 22p R2.5	11.0000	st
.10400223	Condensator ker 68p R2.5	3.0000	st
.10401241	Condensator ker 100nF/50V R5 T	51.0000	s~
.10401268	Condensator poly luF R5.0	6.0000	st
.10401253	Condensator poly IOn R5.0	1.0000	st
.10600516	Conn 16p single row	1.0000	st
.10600043	Conn Sub-D9 fem pcb	2.0000	st
.10250342	Diode 1N4148 (signaal)	2.0000	st
.10400279	Elco luF 63V radiaal R5.0	4.0000	st
.10400292	Elco loOuF 25V radiaal R5.0	53.0000	st
.10400243	Elco 220uF 16V radiaal R5.0	17.0000	S,
.10400281	Elco 4.7uF 50V radiaal R5.0	1.0000	st
.10250338	Fet J112 (N-channel switch)	8.0000	st
.10250017	Fet J175 (P-channel switch)	3.0000	S,
.10600510	Header 2p 2.54 lock recht	1.0000	S,
.10600511	Header 3p 2.54 lock recht	4.0000	S,
.10600452	Header lop 2.54 haaks	3.0000	st
.10600456	Header 20p 2.54 haaks	9.0000	st
.10600140	Header 34p 2.54 haaks	3.0000	S,
.10250001	Ic 7905 T0220 SGS (volt.reg)	1.0000	S,
.10250179	Ic DRV-134PA (SSM2142)	8.0000	st
.10250028	Ic LM-317 (var.pos.volt.reg)	1.0000	st
.10250072	Ic MAX232 (RS232 driver)	1.0000	st
.10250307	Ic NE-5532 AP TI (dual-opamp)	5.0000	st
.10250306	Ic NE-5534 AP TI(single-opamp)	1.0000	st
.10250304	Ic TL-072 CP TI (dual-opamp)	6.0000	S,
.10250305	Ic TL-074 CN TI (quad-opamp)	2.0000	S,
.10600394	Ic-voet 8 pins (vork-contact)	16.0000	st
.10600395	Ic-voet 14 pins (vork-contact)	3.0000	S,
.10300200	Instelpot 25-turn 20k H T93YB	2.0000	st
.10600530	Jack chass. slimline S253-84	4.0000	st
.10300400	Potm.97 10KAx2	6.0000	st
.10300403	Potm.97 IOKBx2 CC	2.0000	st
.10201419	Print Airlab 30a (master 1/01)	1.0000	st
.10201413	Print Airlab 3a (ctr/aux/tape)	1.0000	st
.10201420	Print Airlab 40a (master 1/02)	1.0000	st
.10201414	Print Airlab 4a (studio/tb)	1.0000	st
.10201421	Print Airlab 50a (chipcard)	1.0000	st
.10201415	Print Airlab 5a (lcd/keyb)	1.0000	st
.10201422	Print Airlab 60a (cpu 1/0)	1.0000	st
.10550001	Relais DIC121000 Ixchnge minid	2.0000	st
.10550457	Schak Oct. 97-320.037+97.910.9	7.0000	st
.10550414	Schakelaar Alps 2pole mini NS	5.0000	st
.10550415	Schakelaar Alps 4pole mini NS	9.0000	st
.10250333	Transistor BC-327/25 (pnp)	1.0000	st
.10250332	Transistor BC-337/25 tape(npn)	4.0000	st
.10350517	Weerstand OE 5% 1/4W	1.0000	st
.10350729	Weerstand Iko 5% 1/4W	2.0000	st
.10350730	Weerstand lk2 5% 1/4W	1.0000	st
.10350732	Weerstand lk8 5% 1/4W	4.0000	st
.10350703	Weerstand 2E2 5% 1/4W	11.0000	st
.10350736	Weerstand 3k9 5% 1/4W	5.0000	st
.10350737	Weerstand W 5% 1/4W	6.0000	st
.10350705	Weerstand 10E 5% 1/4W	2.0000	st

.10350776

Weerstand 10MO 5% 1/4W

11.0000 st

60881705
 Airlab master

Articlecode	Description	Quantity	Ur,
.10350741	Weerstand 10k 5% 1/4W	36.0000	st
.10350848	Weerstand 10kO 1% 1/4W	12.0000	st
.10350856	Weerstand 20kO 1% 1/4W	6.0000	st
.10350709	Weerstand 22E 5% 1/4W	1.0000	st
.10350745	Weerstand 22k 5% 1/4W	4.0000	st
.10350713	Weerstand 47E 5% 1/4W	16.0000	st
.10350749	Weerstand 47k 5% 1/4W	21.0000	st
.10350717	Weerstand 100E 5% 1/4W	9.0000	st
.10350753	Weerstand 100K 5% 1/4W	47.0000	st
.10350721	Weerstand 220E 5% 1/4W	1.0000	st
.10350757	Weerstand 220K 5% 1/4W	1.0000	st
.10600798	XLR chassis male 3p pl.zw X906-02	4.0000	st
.10250362	Zenerdiode 4V7 400mW	2.0000	st
.10250350	Zenerdiode 18VO 400mW	4.0000	st
10650448	Bandkabel 20p (R 1.27)	100.0000	cil
10600391	ChipCard 042 X24C16Y	1.0000	st
10600470	Conn 20p female bandkabel	10.0000	st
10450153	Deksel SiFam 11mm black/5bulk	1.0000	st
10450195	Deksel SiFam 11mm gray bulk	4.0000	st
10450152	Deksel SiFam 11mm red/7 bulk	3.0000	st
10101254	Front Airlab 4b (Master)	1.0000	st
10450211	Knop Druktoets 2.8 grey-rectangular	9.0000	st
10450212	Knop Druktoets 2.8 red -rectangular	5.0000	st
10450103	Knop SiFam grey splined(11mm)	8.0000	st
10250131	LCD MC1602B-SBL 16x2(octagon)	1.0000	st
10250386	Led 3mm green SLR-03A210-020	9.0000	st
10250387	Led 3mm red SLR-03A510-020	4.0000	st
10970912	Microfoon (condens) (talkback)	1.0000	st
10700690	Platstaf 25 x 10 x 10mm	2.0000	st
10101230	Plexiglas 16x2 display	1.0000	st
10700611	Popnagel 3.0 x 6.5 blank	4.0000	st
20851419	Printb Airlab 30 (master 1/01)	1.0000	st
20851420	Printb Airlab 40 (master 1/02)	1.0000	st
20851415	Printb Airlab 5 (lcd/keyb)	1.0000	st
20851421	Printb Airlab 50 (chipcard)	1.0000	st
20851422	Printb Airlab 60 (cpu 1/0)	1.0000	st
20851413	Printb Airlab3 (ctr/aux/tape)	1.0000	st
20851414	Printb Airlab4 (studio/tb)	1.0000	si
10700616	Taptite M3x10 bolkoppozidr/zw.	5.0000	st
10700787	Taptite M3x6 bolkoppozidr/zwrt	20.0000	st
10700790	Taptite M3x6 verzkop/pozidr/zw	10.0000	st

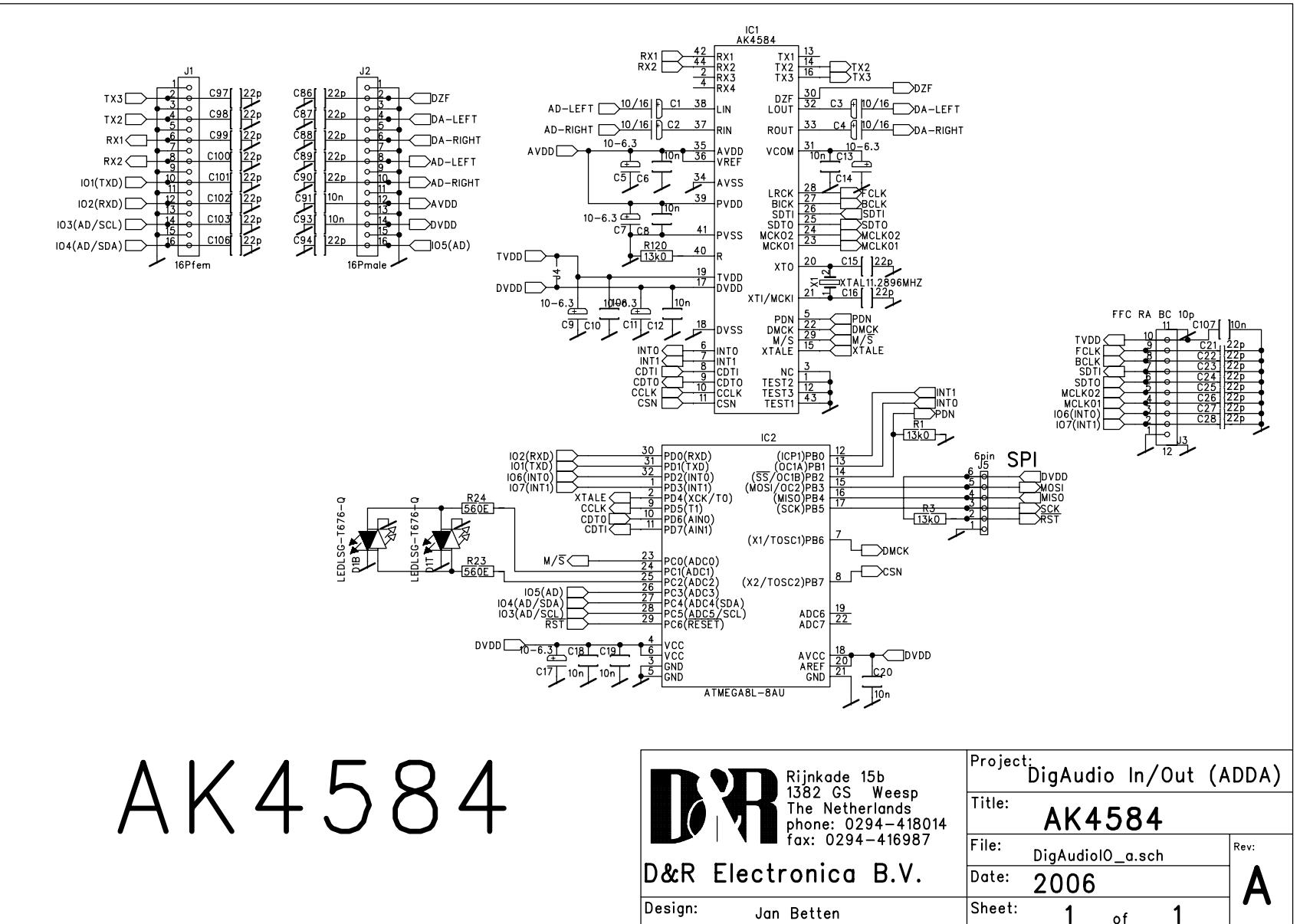
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D & R Electronica

Weesp BV
 60881730
 (SERVICE-MANUAL)
 Airlab VU meter

Comp: 1
 sectie
 Quantity
 cm
 80.0000
 1.0000
 4.0000

Articlecode	Description	Quantity	Un
10650446	Bandkabel 10p (R	80.0000	cm
10600095	Conn Sub-D9 male	1.0000	st
10951006	VU meter ST-475 /	4.0000	st



Makartikel : 60881703 Airlab Digital channel Vrd. enh. : st
 Revisie :

Niveau	Positie	Artikel	omschrijving	Ingangs-datum	Verval-datum	Netto hoeveelheid	Vrd eh.
1	10/ 1	10600173	Conn 3p wrd 2U084-018-0387	01-04-00		1.0000	st
1	40/ 2	10450091	Knob SiF Rub/Red TPN110 006/13	24-04-03		1.0000	st
1	50/ 1	10300094	Fader ALPS-Klin 100mm 10kB 8mm	01-04-00		1.0000	st
1	60/ 1	10101251	Front Airlab-1c (Input Chan.)	01-04-00		1.0000	st
1	70/ 2	10450009	Knob TAK12x12-107 A3.3 GREY	23-02-01		1.0000	st
1	80/ 2	10450010	Knob TAK12x12-107 A3.3 Black	23-02-01		1.0000	st
1	90/ 1	10450208	Pushb SiF 2.8 grey-sq K54436	01-04-00		2.0000	st
1	100/ 1	10450211	Pushb SiF 2.8 grey-rect K54532	01-04-00		2.0000	st
1	110/ 1	10450210	Pushbutton SiF 2.8 red-square	01-04-00		1.0000	st
1	120/ 1	10450105	Knob Fader SiFam grey (1.2x8)	01-04-00		1.0000	st
1	130/ 2	10450090	Knob SiF Rub/Gry TPN110 006/13	24-04-03		5.0000	st
1	160/ 1	20851531	PCB ins Airlab 11p	01-06-06		1.0000	st
.2	10/ 1	10201531	PCB Airlab 11p	01-06-06		1.0000	st
.2	20/ 1	10250004	IC 4053B (HCF4053 BEY) DIL	01-06-06		1.0000	st
.2	30/ 1	10250032	IC THAT 2180 BL08-U (VCA)	01-06-06		2.0000	st
.2	40/ 1	10250076	IC LMB11P comparator	01-06-06		1.0000	st
.2	50/ 1	10250184	IC SSM2019BN or INA217AIP	01-06-06		1.0000	st
.2	60/ 1	10250291	IC 7805 T0220 volt.reg)	01-06-06		1.0000	st
.2	70/ 1	10250304	IC TL072 CP TI DIL-8	01-06-06		2.0000	st
.2	80/ 1	10250305	IC TL074 CN TI (quad-opamp)	01-06-06		1.0000	st
.2	90/ 1	10250332	Transistor BC337/25-RR Tape!!!	01-06-06		1.0000	st
.2	100/ 1	10250333	Transistor BC327/25-RR (TAPE)	01-06-06		1.0000	st
.2	110/ 1	10250351	Zenerdiode 5V6/400mW	01-06-06		4.0000	st
.2	120/ 1	10250386	Led 3mm green SLR-03A210-020	01-06-06		2.0000	st
.2	130/ 1	10250387	Led 3mm red SLR-03A510-020	01-06-06		4.0000	st
.2	140/ 1	10300206	Trimmer 10k 15turn (T18)	01-06-06		1.0000	st
.2	150/ 1	10300200	Trimmer 20k Top H 25trn(T93YB)	01-06-06		2.0000	st
.2	160/ 1	10300423	RK09 10KAx2 Short version	01-06-06		1.0000	st
.2	170/ 1	10300421	RK09 100KBx2cc Short version	01-06-06		3.0000	st
.2	180/ 1	10300420	RK09 10KBx2cc Short version	01-06-06		2.0000	st
.2	190/ 1	10350703	Resistor 2E2 5% 1/4W	01-06-06		7.0000	st
.2	200/ 1	10350713	Resistor 47E 5% 1/4W	01-06-06		2.0000	st
.2	210/ 1	10350714	Resistor 56E 5% 1/4W	01-06-06		1.0000	st
.2	220/ 1	10350717	Resistor 100E 5% 1/4W	01-06-06		5.0000	st
.2	230/ 1	10350719	Resistor 150E 5% 1/4W	01-06-06		1.0000	st
.2	240/ 1	10350722	Resistor 270E 5% 1/4W	01-06-06		1.0000	st
.2	250/ 1	10350723	Resistor 330E 5% 1/4W	01-06-06		1.0000	st
.2	260/ 1	10350725	Resistor 470E 5% 1/4W	01-06-06		1.0000	st
.2	270/ 1	10350726	Resistor 560E 5% 1/4W	01-06-06		1.0000	st
.2	290/ 1	10350732	Resistor 1k8 5% 1/4W	01-06-06		2.0000	st
.2	300/ 1	10350733	Resistor 2k2 5% 1/4W	01-06-06		2.0000	st
.2	310/ 1	10350734	Resistor 2k7 5% 1/4W	01-06-06		2.0000	st
.2	320/ 1	10350737	Resistor 4k7 5% 1/4W	01-06-06		3.0000	st
.2	330/ 1	10350739	Resistor 6k8 5% 1/4W	01-06-06		4.0000	st
.2	340/ 1	10350741	Resistor 10K 5% 1/4W	01-06-06		10.0000	st
.2	350/ 1	10350743	Resistor 15k 5% 1/4W	01-06-06		2.0000	st
.2	360/ 1	10350744	Resistor 18k 5% 1/4W	01-06-06		4.0000	st
.2	370/ 1	10350746	Resistor 27k 5% 1/4W	01-06-06		3.0000	st
.2	380/ 1	10350753	Resistor 100K 5% 1/4W	01-06-06		5.0000	st
.2	390/ 1	10350757	Resistor 220k 5% 1/4W	01-06-06		2.0000	st
.2	400/ 1	10350765	Resistor 1MΩ 5% 1/4W	01-06-06		1.0000	st

Makartikel : 60881703 Airlab Digital channel Vrd. enh. : st
 Revisie :

Niveau	Positie	Artikel	Omschrijving		Ingangs-datum	Verval-datum	Netto hoeveelheid	Vrd eh.
.2	410/ 1	10350776	Resistor 10M	5% 1/4W	01-06-06		2.0000	st
.2	420/ 1	10350784	Resistor 3k48	1% 1/4W	01-06-06		1.0000	st
.2	430/ 1	10350826	Resistor 866E	1% 1/4W	01-06-06		1.0000	st
.2	440/ 1	10350844	Resistor 4k75	1% 1/4W	01-06-06		2.0000	st
.2	450/ 1	10350846	Resistor 6k81	1% 1/4W	01-06-06		2.0000	st
.2	460/ 1	10350848	Resistor 10k0	1% 1/4W	01-06-06		9.0000	st
.2	470/ 1	10350856	Resistor 20k0	1% 1/4W	01-06-06		5.0000	st
.2	480/ 1	10350859	Resistor 24k3	1% 1/4W	01-06-06		1.0000	st
.2	490/ 1	10350861	Resistor 28k7	1% 1/4W	01-06-06		1.0000	st
.2	500/ 1	10350866	Resistor 47k5	1% 1/4W	01-06-06		1.0000	st
.2	510/ 1	10350913	Resistor 75E0	1% 1/4W	01-06-06		1.0000	st
.2	520/ 1	10400209	Capacitor 4p7	R2.5 ker	01-06-06		2.0000	st
.2	530/ 1	10400211	Capacitor 6p8	R2.5 ker	01-06-06		2.0000	st
.2	540/ 1	10400213	Capacitor 10p	R2.5 kerk	01-06-06		2.0000	st
.2	550/ 1	10400243	Elco 220uF/16V rad	R5.6x12mm	01-06-06		10.0000	st
.2	560/ 1	10400279	Elco 1uF/100V radial	R5.0	01-06-06		2.0000	st
.2	570/ 1	10400284	Elco 10uF/50V radial	R5.0	01-06-06		4.0000	st
.2	580/ 1	10400292	Elco 100uF/ 25V rad	R5.0	01-06-06		4.0000	st
.2	590/ 1	10400303	Elco 1000uF/ 10V radial	R5.0	01-06-06		1.0000	st
.2	600/ 1	10401241	Capacitor 100n/50V	R5.0 ker	01-06-06		26.0000	st
.2	610/ 1	10401246	Capacitor 1n0	R5.0 poly	01-06-06		6.0000	st
.2	620/ 1	10401250	Capacitor 4n7	R5.0 poly	01-06-06		1.0000	st
.2	630/ 1	10401251	Capacitor 6n8	R5.0 poly	01-06-06		2.0000	st
.2	640/ 1	10401258	Capacitor 47n	R5.0 poly	01-06-06		1.0000	st
.2	650/ 1	10401261	Capacitor 100n	R5.0 poly	01-06-06		1.0000	st
.2	660/ 1	10401263	Capacitor 180n	R5.0 poly	01-06-06		4.0000	st
.2	670/ 1	10550395	Switch Alps 2p-ns	MDMENT	01-06-06		2.0000	st
.2	680/ 1	10550414	Switch Alps 2pole mini	NS	01-06-06		2.0000	st
.2	690/ 1	10550415	Switch Alps 4pole mini	NS	01-06-06		3.0000	st
.2	700/ 1	10600140	Header 34p	90° R2.54	01-06-06		1.0000	st
.2	710/ 1	10600456	Header 20p	90° R2.54	01-06-06		3.0000	st
.2	720/ 1	10600478	Header 4P 0°	R 2.54	01-06-06		6.0000	st
.2	730/ 1	10600511	Header 3P Lock 0°	R 2.54	01-06-06		1.0000	st
.2	740/ 1	10600516	Conn 16p (single row)	16p	01-06-06		1.0000	st
.2	750/ 1	10600517	Header 16p (single row)	16p	01-06-06		1.0000	st
.2	760/ 1	10950030	Transformer PE65612	(pulse)	01-06-06		2.0000	st
.2	770/ 1	10600402	IC-socket 8 pins:SIL	2.54mm	01-06-06		2.0000	st
.2	780/ 1	10600394	IC-socket 8 pins		01-06-06		4.0000	st
.2	790/ 1	10600395	IC-socket 14 pins:fork-contact		01-06-06		1.0000	st
.2	800/ 1	10600396	IC-socket 16 pins:fork-contact		01-06-06		1.0000	st
.2	810/ 1	10350749	Resistor 47K	5% 1/4W	27-09-06		2.0000	st
.2	820/ 1	10350735	Resistor 3k3	5% 1/4W	27-09-06		2.0000	st
.2	830/ 1	10250382	Led 3mm Bi-Colour	Airlab dig	27-09-06		1.0000	st
1	170/ 1	20851418	PCB ins Airlab10	channel I/O	01-04-00		1.0000	st
.2	10/ 1	10250342	Diode 1N4148 (signal)		01-04-00		1.0000	st
.2	20/ 1	10550001	Relay D1C121000	1xchnge minid	01-04-00		1.0000	st
.2	30/ 1	10600536	Conn Cinch 2xPCB(gold	pl bush)	01-04-00		1.0000	st
.2	40/ 1	10600530	Jack Break slimline	S253-84	01-04-00		1.0000	st
.2	50/ 1	10600456	Header 20p	90° R2.54	01-04-00		1.0000	st
.2	60/ 1	10600238	XLR chas 3p fem	X907-02	01-04-00		3.0000	st
.2	70/ 1	10201418	PCB Airlab-10B	(chan i/o)	01-04-00		1.0000	st

Makartikel : 60881703 Airlab Digital channel Vrd. eenh. : st
 Revisie :

Niveau	Positie	Artikel	omschrijving	Ingangs-datum	Verval-datum	Netto hoeveelheid	Vrd eh.
.2	80/ 1	10600534	Stacking Jack NSJ12HC	29-03-06		1.0000	st
1	180/ 1	10700690	Flat Staff 25x10x10mm M8+2hole	01-04-00		1.0000	st
1	190/ 1	10700611	Popnagel 3x6 blank	01-04-00		2.0000	st
1	200/ 1	10700786	Taptite M8x5 verzkop/pozidr/zw	01-04-00		2.0000	st
1	210/ 1	10700790	Taptite M8x6 verzkop/pozidr/zw	01-04-00		1.0000	st
1	220/ 1	10700787	Taptite M8x6 bolkoppozidr/zwrt	01-04-00		2.0000	st
1	240/ 1	10600470	Conn flatcable 20p fem ROHS	01-04-00		4.0000	st
1	250/ 1	10650448	Flatcable 20p r1.27	01-04-00		55.0000	cm
1	260/ 1	10700603	Parker 2.9x9,5 verz PD D7981	01-04-00		7.0000	st
1	270/ 1	20851532	PCB ins PCB DigAudioIO-A	01-06-06		1.0000	st
.2	10/ 1	10201532	PCB DigAudioIO-A	01-06-06		1.0000	st
.2	20/ 1	10600516	Conn 16p (single row 16p)	01-06-06		1.0000	st
.2	30/ 1	10600517	Header 16p (single row 16p)	01-06-06		1.0000	st
.2	40/ 1	10400346	Elco SMD 10/6.3 tant. A3216	01-06-06		6.0000	st
.2	50/ 1	10400362	Elco smd 10/16V 222215365109	01-06-06		4.0000	st
.2	60/ 1	10402256	Capacitor smd 10n NPO 0402	01-06-06		11.0000	st
.2	70/ 1	10353857	Resistor smd 13K0 0603 0.1W 1%	01-06-06		3.0000	st
.2	80/ 1	10402218	Capacitor smd 22p ker 0402	01-06-06		24.0000	st
.2	90/ 1	10353726	Resistor smd 560E 0603 0.1W 5%	01-06-06		2.0000	st
.2	100/ 1	10250474	IC AK4584VQ audio codec	01-06-06		1.0000	st
.2	110/ 1	10250241	IC ATmega 8L-8AU Atmel 8bit	01-06-06		1.0000	st
.2	120/ 1	10200423	Led SMD Multitopled Red/Grn	01-06-06		2.0000	st
.2	130/ 1	10250408	Crystal 11.2896 Mhz HC49M SMD	01-06-06		1.0000	st

